

What has neuroscience ever done for us?

Jonathan Roiser considers the case of mental health



The British
Psychological Society
Promoting excellence in psychology

letters 254
news 264
careers 318
reviews 326

the exciting side of boredom 278
seeing through the double blind 288
the power of personality 296
looking back: Baddeley on memory 334



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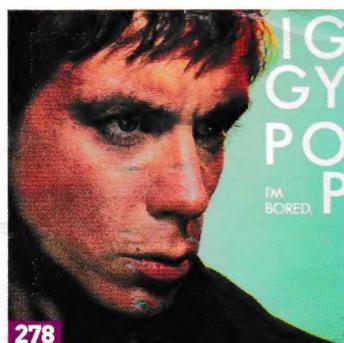
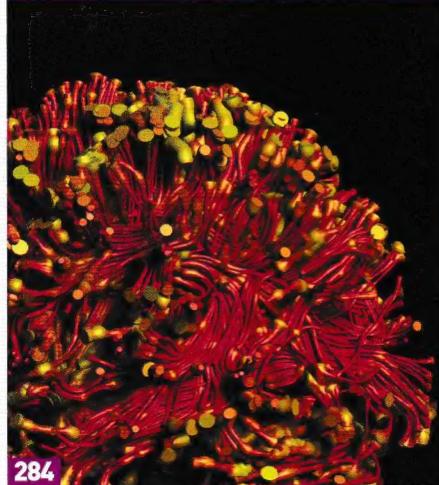
Cover

The Trumpeting Brain
created by Alexander Leemans
www.providi-lab.org
White matter fibre tract pathways
shown with different colours and
widths to emphasise the local
degree of uncertainty along their
trajectories. The trumpet-shaped
ending when pathways are
projecting into cortical regions
represents the more complex
architectural organisation than
the coherently aligned white
matter fibre bundles.

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the psychologist...

...features



What has neuroscience ever done for us? 284
Jonathan Roiser (winner of the Society's Spearman Medal 2013) considers the case of mental health

The exciting side of boredom

Our journalist Ella Rhodes speaks to psychologists who think boredom has had a bad press

Seeing through the double blind

A randomised control trial is quality science, right? Not necessarily. Lewis Killin and Sergio Della Sala explain (see also 'interview')

The power of personality

John D. Mayer argues that 'personal intelligence' shapes our lives

New voices: Calling time on Alzheimer's

Could circadian rhythms be the key? Brianne Kent with the latest in our series for first-time authors

...debates

letters

making writing readable; legal highs; dyscalculia; repatriation; autism; and more

The Psychologist is the monthly publication of The British Psychological Society. It provides a forum for communication, discussion and controversy among all members of the Society, and aims to fulfil the main object of the Royal Charter, 'to promote the advancement and diffusion of a knowledge of psychology pure and applied'.

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International panel Vaughan Bell, Uta Frith, Alex Haslam, Elizabeth Loftus

...reports

news

the business of people; new podcasts; action on austerity; whistleblowing; journal bans null hypothesis significance testing; behaviour change event; and more

264

society

President's column; Society milestones; Scottish Branch event; and more

304

...digests

visual illusions and open-mindedness; recruitment; six forms of resistance in Milgram's studies; effective teaching; when psychotherapy doesn't work; and more, in the latest from our free Research Digest (see www.researchdigest.org.uk/blog). For the first episode of the Research Digest podcast PsychCrunch, see <http://digest.bps.org.uk/2015/02/episode-one.html>

272

...meets

interview

Sergio Della Sala lets Lance Workman into his world to dispel some mind myths and debunk pseudoscience (see also p.288)

292

careers

we hear about the journey of a psychologist in public health from Amanda Bunten; and we get three perspectives on volunteering, from Samara Aziz, Sahdia Parveen and Jan R. Oyebode

318

one on one

with Sue Llewelyn, Professor of Clinical Psychology at Oxford University

336

...reviews



How I Learned to Drive; The Domesticated Brain; Race, Gender and the Activism of Black Feminist Theory; new podcasts; The Secret Life of Four-Year-Olds; new Jon Ronson book; and more

326

...looks back

How it all began

Alan Baddeley describes the origins of the multi-component model of working memory

334

The Psychologist and Digest Editorial Advisory Committee

Catherine Loveday (Chair), Phil Banyard, Olivia Craig, Helen Galliard, Harriet Gross, Rowena Hill, Stephen McGlynn, Tony Wainwright, Peter Wright

Two years ago

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the issue

Piecing together the puzzle of mind and behaviour is no simple task, so it is no surprise that we regularly carry articles that make use of various explanatory levels in attempting this. What does surprise me is the response these often get. My own sense is that alarmist fears over reductionism can lead the more socially and politically inclined to throw the neuroscientific baby out with the bathwater, particularly around mental health; the more biologically inclined, on the other hand, tend to take it as read that multiple factors act on our brains.

On p.284, Jonathan Roiser argues that psychology and neuroscience have each 'much to learn from the other, since they address the same questions but in a complementary fashion, at different levels of explanation. Ultimately they require integration: "mindless" neuroscience and "brainless" psychology are both incomplete explanatory frameworks.' To me, the same sentiment, applied within psychology, should be uncontroversial. So why does past experience tell me it's anything but?

Dr Jon Sutton

Managing Editor @psychmag



Big picture centre-page pull-out
A baby's view of the protoface.
Punit Shah is the winner of our 'Big Picture' competition.

Making writing readable

Simon Oxenham and Jon Sutton ('Words and sorcery', March 2015) lucidly considered the causes and consequences of bad writing in psychology. They provided several quotations from psychologists who had eventually seen the light. But in their four-page article they only provided one paragraph telling writers what to do about it: '...take time over your writing; it matters. Don't drain it of colour. Put yourself and others back into the worlds you write about. Above all consider your

audience and try to write in smaller words for bigger circles.'

Such advice is not practical. We need something more basic, and some ways of enforcing it. First of all I recommend that writers measure the readability of their prose by applying a standard readability formula. Next, we need to set

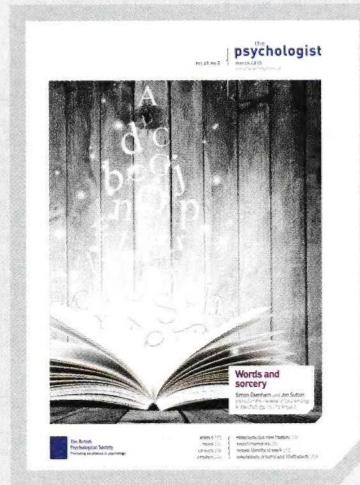
From a mature student perspective, reading 'Words and sorcery' in the March edition of *The Psychologist* was a breath of fresh air. Throughout almost the entirety of my degree I wondered if I was the only person questioning why academics sometimes explain straightforward concepts in such highly convoluted terms. At first I was convinced it was solely down to me 'not understanding' the concepts and methodology discussed, but as the years went by and I gained more knowledge (which is obviously still nowhere near complete) I started to realise that after reading a paper a few times a light bulb would go off ('Ah, so that's what they mean!'), subsequently jotting down some plain, easy to understand notes so I could quickly remind myself of the paper's main points when needed.

For the inexperienced student, the abundance of articles using this 'bad writing style' results in an inflated inferiority complex; there is a strange assumption that qualifications equal an automatic understanding of these more 'difficult' papers, and it is a comfort to read that even highly successful and experienced academics get exasperated in a similar way to us lowly students. Of course I am not suggesting all academic papers succumb to this obscure writing style. I have found some to be a blessing – straight-to-the-point articles making my life, and possibly that of hundreds of students, so much easier.

Nor do I believe that this is a direct attempt to bamboozle readers (although perhaps there is an implicit aim to impress). I too, can identify with the explanation that academics are delivering what they believe is required of them and also believe

some targets to achieve.

In a recent study Barbic et al. (2015) calculated the readability of 504 articles in psychiatry journals and came up with mean Flesch scores of 5.66, 4.14 and 5.41 for the abstracts, introductions and methods sections. Earlier my colleagues and I (Hartley, Pennebaker & Fox, 2003) measured the readability of these same sections for articles in 80 educational



this is something which begins at the undergraduate level. In terms of my own experience, I have had a lifelong passion for writing, but since studying psychology I have struggled with what is expected in the field... I admit on more than one occasion feeling as though I went through deleting all of the 'colour' out of my work

in hopes of emulating the type of journal articles I had previously read. It is easy to see how this style perpetuates, when published journal articles – the highest available standard a student has access to – routinely fall into the trap of using a lot of big words to describe not that much at all.

Unfortunately, this writing style (again from my perspective) seems like such an ingrained approach in psychology I cannot see things changing anytime soon. I have an incredible amount of passion for psychological research, and luckily have been taught by some experienced academics who also convey this passion – how wonderful it would be for all students to see such passion reflected more readily in some of the more sterile journal articles... and how encouraging for the next generation of academics.

**Angela Wear
Northumbria University**

contribute

THE PSYCHOLOGIST NEEDS YOU!

Letters

These pages are central to *The Psychologist*'s role as a forum for communication, discussion and controversy among all members of the Society, and we welcome your contributions. Send e-mails marked 'Letter for publication' to psychologist@bps.org.uk; or write to the Leicester office.



Letters over 500 words are less likely to be published. The editor reserves the right to edit or publish extracts from letters. Letters to the editor are not normally acknowledged, and space does not permit the publication of every letter received.

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Robert Sternberg, Oklahoma State University

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psychology journals. We found mean scores of 18.1, 20.5 and 22.7 respectively.

Clearly both of these studies show that academic articles are horribly difficult to read. Indeed Flesch scores of 0–30 are labelled 'very difficult' on a scale that goes from 0–100. But readability scores can be improved if you try to do something about it (e.g. shorten words and sentences, use the present tense, write as you speak, etc.). So my first proposal is that authors should check the readability levels of their articles before they submit them, and try to improve them if the scores are low.

My other, more radical suggestion is that the editors of journals in psychology should reject articles that are submitted

with scores of less than 30 on the Flesch scale, or ask for a rewrite. How about it?

James Hartley
Keele University

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Barbic, S.P. et al. (2015). Readability assessment of psychiatry journals. *European Science Editing*, 41(1), 3–10.
Hartley, J., Pennebaker, J.W. & Fox C. (2003). Abstracts, introductions and discussions: How far do they differ in style? *Scientometrics*, 57(3), 389–398.

P.S. This letter has a Flesch readability score of 47.8 – not counting the references. Most word-processors provide Flesch scores under 'Spelling and grammar' or copying your text into <https://readability-score.com/> takes about two minutes.

Did the authors of the article 'Words and sorcery' intend to illustrate the sins of bad writing by exemplifying them?

Why is the article empty of what the authors commend as virtuous: humour, vivid and arresting phrases and Elizabeth Loftus style 'stories', except for one from Dorothy Bishop? Why are there no examples of what the authors of the article consider virtuous and sinful? In fact, the only illustrations are the four jargon words, where the words are excellent examples of what the authors claim to find sinful.

Instead of 'The Curse of Knowledge has many guises: lack of theory of mind... [three lines later] illusory transparency', why not 'Consider what readers already know and do

not know'? Instead of 25 lines on functional fixity, why not 'Think outside the box'? Instead of 22 lines on the guru effect, why not 'Students want to sound clever'? Instead of 15 lines on effort justification, why not 'Readers feel better if they have to suffer while labouring through an obscure article'?

Why not recommend us all to adopt what copywriters have been taught for generations: AIDA? That is, attract Attention, generate Interest, stimulate Desire and promote Action? So, instead of the obscure and undeveloped use of 'sorcery' in the title, the article could have attracted attention by 'Can anyone here write English?'

followed by questions as above. Interest could have been generated by examples of the Beauties and the Beasties with anecdotes and rewrites as above. Desire could have been stimulated by examples that have generated admiration and recognition for the author. Action by inviting readers to select examples of bad writing and submit their rewrites. The reward? The Editor would select the best rewrites and publish them in *The Psychologist*.

Why not demonstrate that we understand people by attracting their attention, generating their interest, stimulating their desire and promoting their action, so that they say 'Whyever can't every psychologist, including myself, write like that?' Joshua Fox
Hailsham, East Sussex

The great scientists of the 19th century wrote for the educated public in style. Even in the 20th century, with so much specialist jargon to interpret, almost all the really original people wrote clearly. I never heard Anna Freud at Hampstead use any specialist words except 'Oedipus complex', although the language of her acolytes was as dense as could be. Oliver Zangwill's spoken and printed lectures were identical, although his spoken lectures were never reading the written word.

I liked reading simple expositions as an

undergraduate in psychopathology, and so I made my case study of a good-time girl of the slums as alive as possible. 'This is not the *Women's Weekly*!' I was scolded, while the essay that received top marks was so thick with chunks of heavy phrases that nothing of its live subject could be found.

In our later careers, my reports were welcomed by teachers, and the prize-winner of our class wrote reports that impressed psychiatrists.

Valerie Yule
Mount Waverley, Victoria, Australia

Support for whistleblowers

The BPS response to the Robert Francis QC's independent review in July 2014 identified recommendations to prevent the need for whistleblowing. The recent case of Dr Dare, Consultant Clinical Psychologist, highlights the potentially devastating costs of telling the truth in the NHS. She experienced victimisation and major employment difficulties whilst employed at Broadmoor. [See our news item on whistleblowing on p.268.]

I attended a recent session with presentations by whistleblowers at Ampleforth Abbey in North Yorkshire. A non-profit organisation Whistleblowers UK (www.whistleblowersUK.org), independent of the NHS, has been set up which is relevant to NHS workers who are thinking of feeding back service deficiencies to their employers. The organisation can give confidential support and advice for those who are considering acting on their conscience before or after their situation escalates.

Margaret A. Charlton CPsychol AFBPs
Alfreton, Derbyshire

New challenges raised by 'legal highs'

Lorna MacKay's letter (February 2015) about novel psychoactive substances (NPSs or 'legal highs') raises important questions about their potential impact on mental health. We agree that there is an urgent need for research and evidence-based guidance on these new drugs, to assist service providers and users alike.

It is difficult to conduct research in the area for several reasons. Firstly, there are many different NPSs and those who use them appear to try many different types (Van Hout & Brennan, 2011). Secondly, new drugs arise quickly as existing ones are made illegal. It is therefore very difficult to examine the individual contribution of specific drugs. For example, if baseline paranoia and drug use is measured once at baseline and then repeated six months later, users may have used several different substances and started to use new ones since baseline. It is therefore difficult to determine whether

any one specific substance is influencing any changes observed.

A third problem with NPSs is that despite often being 'legal', it is not ethical to administer them to human volunteers in a research study, because they are new substances with unknown toxicology – paradoxically, it is far safer to administer illegal drugs such as MDMA/Ecstasy or cannabis. One partial solution is to investigate NPSs naturalistically as people use self-administer these drugs themselves (as has been done by Freeman et al., 2012, with mephedrone).

Another strategy is the collection of survey data, such as the annual Global Drugs Survey founded by Dr Adam Winstock (www.globaldrugsurvey.com), which was recently completed by 100,000 people in 50 countries. These data indicate that synthetic cannabinoid products (e.g. 'Spice') are associated with a 30-fold greater risk of emergency medical treatment than natural cannabis and elicit greater paranoia; only 7 per cent preferred them over natural cannabis (Winstock & Barratt, 2013).

Sharing information about NPSs is widespread on the internet (e.g. www.erowid.org), and other researchers have taken a resourceful approach by searching through this information, summarising it and disseminating it in a timely, accurate and accessible format.



We believe that innovative research methodologies and adaptive clinical practice are needed in light of the challenges raised by NPSs. We hope that service providers will discuss NPSs with drug users and encourage them to share their experiences to take part in research in order to improve our understanding of these new drugs.

Dr Tom Freeman
University College London

Dr Thomas Richardson
Solent NHS Trust Portsmouth and University of Southampton

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Fitness to practise

I am pleased that John Barwick from the HCPC responded (Letters, March 2015) to my letter about fitness-to-practise hearings. His explanation of the process appears to assume that a lack of fitness is a rather unambiguous state of affairs. Take the example of the registrant from 2013/14 who was sanctioned for being rude and insulting to a service user. I have not read the transcript of the hearing, but I would like to know how the client was harmed. Is it not the kind of situation that could be remedied by an apology and perhaps financial compensation? If the registrant's personality is not fit for the role, employment could be terminated without needing an elaborate investigation by the HCPC.

I do not believe we need a national regulatory body, barristers and teams of solicitors, to ensure that we are nicely behaved. The justification for the existence of the HCPC is to protect the public, and this should not mean protection from hurt feelings.

Professional rules of conduct are formulated in such a general way that a breach is not self-evident. Combine this with the fact that the composition of panels (and the effectiveness of legal defence teams) varies from one hearing to another, it must make the whole process rather hit and miss. This is borne out by the case of the registrant in 2014 who admitted to having sex with a recent ex-patient and was suspended for one

year. This decision was overturned by the HCPC's own regulator, the Professional Standards Authority, who appealed in the High Court resulting in a strike-off verdict.

John Barwick states that 'professional boundaries can often be managed through clinical supervision', which is of course true. However, boundary crossings are regularly cited as a cause of a lack of fitness to practise at hearings, even though professionals cannot agree amongst themselves when a boundary crossing amounts to a serious violation. For instance, is a therapist banned for ever from a sexual relationship with a former client? This seems to perpetuate the stigma of being a patient. How harmful is it to

socialise with an ex-client or employ them in some capacity?

John Barwick writes that the purpose of HCPC is not to resolve disputes between registrants and service users/clients. Presumably, it is to weed out unfit practitioners who come to light because someone complains about them. In other words, an initial complaint is a key element in the process. He says that a registrant can avoid a hearing by voluntary removal, or by accepting conditions of practice or a caution agreement. This implies that in these cases, there is an assumption of guilt before the evidence is heard. A decision to contest an allegation is quite likely to be taken as a sign of the

'Post-repatriation stress disorder'?

I have been involved in repatriations of bodies since working with victims of torture in the 1980s after their missing relatives' and friends' bodies were discovered and had to be brought home. I also experienced repatriations working with the NYPD after 9/11, and with the British armed forces at 27 military bases from 2007 to 2014. I have observed a distinct pattern of psychological reactions to repatriations.

Repatriations are highly important solemn ceremonies, and most individuals who take part in them experience a range of reactions. Until repatriations are researched, reactions to them are most easily contained, understood and managed under the umbrella term 'post-repatriation stress disorder' (PRSD).

PRSD is 'an inconvenient truth' (see Nimenko, 2015) and is not mentioned in literature searches or by those involved in ensuring repatriations take place. Without researching repatriations, the impact of PRSD on individuals cannot be accurately described and PRSD cannot reliably identified as a separate disorder.

Repatriations let us experience sacrifice and loss side by side with the justice and injustice of conflict. This unique mixture gives them the potency to be profoundly stressful and overwhelming, and also life-changing. Repatriations are also 'invisible bullets' because their impact is hidden, leaving individuals being poorly understood and often suffering in silence just to try and keep their jobs. This can ultimately lead to operationally non-effective individuals and can result in future claims for compensation.

Individuals are frequently left permanently haunted by repatriations because they have the power to be profoundly

registrant's 'lack of insight' into their own lack of fitness. However, in many cases, a registrant is forced to contest an allegation because it is malicious.

As one interviewee stated in a study by McGivern and Fischer (2012), 'If you are going to work with mental illness or psychological distress then false allegations, either malicious or based in psychosis or whatever it may be, are institutional hazards.' These authors mention the case of a GP 'whose good practice reporting child abuse had resulted in a counter complaint, which opened every aspect of her practice to investigation, irrespective of its relevance to her handling of the case'. It is patently clear that the process of

investigation of a complaint is punitive whether or not the allegation (as frequently happens) is ultimately dismissed. For a profession that depends on trust, the publicity given to allegations on the HCPC's website before they are even heard and adjudicated is as damaging as a 'no case to answer' judgement.

Richard Hallam
Visiting Professor of Psychology
University of Greenwich

Reference

McGivern, G. & Fischer, M.D. (2012). Reactivity and reactions to regulatory transparency in medicine, psychotherapy and counselling. *Social Science and Medicine*, 74, 289–296.

moving and life-changing experiences (see BBC News Channel: tinyurl.com/nh83p55). Repatriations can either reinforce or weaken our 'sense of meaning' of ourselves and society, our 'world view'. This can have profound impact because it can change religious views, belief in society, leaders, justice and injustice. Repatriations can change someone's whole direction in life, affecting their career, relationships with family, friends, colleagues and the wider world.

PRSD is an 'elephant in the room' for several reasons. First, most GPs and psychiatrists working with the armed forces and emergency services are reluctant to accept PRSD as an identifiable disorder, but at the same time indicate that they do not want to have to consider another line-of-duty-related psychological disorder which they would have to look for; especially when a person leaves. Second, they admit they haven't got the staff to prevent it, screen for it or treat it, let alone the money to compensate for it. Third, there is also an unspoken, culturally conditioned expectation of not showing emotional reactions to repatriations. The rigorous training of the armed and emergency services strongly encourages individuals in rapid recovery and the need to immediately execute other duties after repatriations. This does not necessarily add to resilience training and may actually encourage avoidance.

Lastly, there is a taboo of speaking about death in general but especially about repatriations because the media portrayal of repatriations plays a role in nurturing the continued support of the public for the emergency services and armed forces. Just talking about repatriations can be the beginning of reducing the risk of developing reactions, especially if the need for psychological training, monitoring and support is recognised.

Wasyl Nimenko
Berkeley, Gloucestershire

Reference

Nimenko, W. (2015, Spring). Post-repatriation stress disorder: An inconvenient truth. *The Psychotherapist*. Issue 59, pp.37–39. Available at http://issuu.com/ukcp_commsmgr/docs/tp_59_v12_final

NOTICEBOARD

Do you undertake the **assessment of mental health problems following a road traffic accident**? If so, we are currently recruiting participants to a study that aims to improve this field. Participants who take part will receive a best practice guide. If you're interested, please email the principal researcher.

Ashley Cartwright
Ashley.cartwright@hud.ac.uk

I'm a retired clinical psychologist, book blogger and soon-to-be published novelist. I'm keen to hear from other **Chartered Psychologists who have published a full-length work of fiction** to feature on my blog. Anyone interested, please get in touch through my website.

Anne Goodwin
<http://annegoodwin.weebly.com>

The secret life of a dyscalculiac

I am a master's student with dyscalculia. To this day I have been the only one with this specific learning disability throughout my academic career, nor have I ever met another person with dyscalculia, let alone one studying psychology. In these pages in June 2013, Ellen Goudsmit drew attention to the invisibility of disabled scientists working within psychology, filling me with a tremendous relief that it was not just me feeling this way, and that it mirrored experiences of my own.

Support for my condition within university has been mixed, with reactions ranging from confusion to disbelief, and even asking if I am sure I am not just 'lazy'. The lack of knowledge concerning the lived experiences of dyscalculia means that I read

some very insensitive comments in journals, and hear them from psychologists themselves. Many individuals working within or studying psychology either have no idea or don't care about the damage caused by ill-informed opinions. Wrong information isn't corrected, perpetuating myths and undermining best practice that could go a long way in helping me and others with dyscalculia within further education and everyday life.

The fact is that there are those with the condition who can make a contribution to the alleviation of suffering even though they themselves are struggling. The harsh reality is that many do not even get to further education due to erratic or non-existent support. If and when they do make it to university (and not having been scared away from

psychology), the support provided is not always what is needed, nor is support universal across universities. Now I am in my master's, I have learned this the hard way; there is just not enough understanding on how to help the individual with dyscalculia, and although I have a good grasp on what I need from support services, because of the baffling way support differs across institutions, I cannot get it put into place.

Few know of this struggle, and in my view, I am not valued within psychology, my views are dismissed and people seem to be more comfortable forgetting about the havoc dyscalculia can wreak for the individual. Things are also not helped by the complete lack of an independent body within the

UK solely representing dyscalculia. There is no one I can ask for specific advice, no one to ask for support, and those poor dyslexia advisers are only more confused on what to do when I am inevitably passed on to them. So the struggle continues. Shouldn't we, out of all the professions, be challenging what is essentially pure discrimination and utter lack of knowledge? It is 2015 and I am still met by the question from many a psychologists: 'Dyscalculia? I've never heard of it, are you sure you're trying hard enough?' Despite this, I graduated top of my degree class and continue to do well. It can be done. To the individuals within psychology also coping with dyscalculia, you are not alone.

Michelle Kimberly Jamieson
Glasgow



**The British
Psychological Society**
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Chartered Psychologist and Clinical Psychologist
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A misleading juxtaposition?

In the February issue Magda Osman ('Does our unconscious rule?') asserted the view that the conscious mind should be given more credit for its role in our self-control and decision-making processes. Yet the very juxtaposition at the core of her argument, positioning the 'unconscious' in opposition to the 'conscious,' strikes me as fallacious. I would like to offer an alternative perspective.

Osman begins by weighing up intuitive against conscious decision making, suggesting that mental practice and simulation improve performance. I am both a theatre practitioner (actor/director and facilitator) and a psychologist. Reflecting on the actor's experience in rehearsal, I can, of course, appreciate the importance of psycho-physical simulation. It's what actors, musicians, dancers, athletes and martial artists do to excel at their craft. Yet the conscious rehearsal reflects only half the picture. Once in performance, the actor or dancer or musician does not repeat a simulation but enters into a living process, in which there is both a profound embodiment of technique and an awareness of what is emerging in the moment... between the ensemble and within the self. Technical mastery of a choreography or score goes hand in hand with improvisation; and improvisation requires mindful presence.

I use the term mindfulness on purpose here. Actors or dancers or musicians do not perform on autopilot. Rather, there is a sophisticated balancing act, in which complex embodied scores of action are executed with heightened psychosomatic awareness. Unconscious and conscious (if this duality still holds) work as one.

We can refer here, among others, to Csikszentmihályi (1990), who described this phenomenon as 'flow' or being in the zone. And when it comes to those experts mentioned by Osman who have to make speedy decisions in high-stake situations... I would think the same applies. The danger of lapsing into autopilot or panicking and dropping out of the flow state always exists. As Osman herself asserts, 'familiarity can breed contempt'; and furthermore, as Csikszentmihályi would suggest, if the challenge of a situation does not match the person's level of skill, then again the flow state will be compromised and 'bad decisions' may result.

I would also suggest that it's worth differentiating between intuition and

instinct. In her article Osman uses the two terms interchangeably; and in doing so, I believe she is committing what Wilber (1998) calls a pre/trans fallacy, confusing pre-rational discernment (which I would equate with instinct) with trans-rational discernment (which I would call intuition). Crucially, I posit that intuitive discernment includes and transcends the rational mind, whilst instinctive decision making involves a bypassing of rationality.

This differentiation is important, because it has practical implications: I would suggest that whilst we are born with a basic pre-rational capacity to make



Actors or dancers or musicians do not perform on autopilot

decisions (which aids our survival), as we grow older we can achieve higher, more complex levels of insight which combine irrational and rational capacities. Moreover, the natural evolution from pre-rational instinct to trans-rational intuition can be nurtured through a great range of practices which have been explored in both ancient wisdom traditions and contemporary humanistic and transpersonal pathways. There is potential for research here, no doubt!

I would also like to comment on Libet's (1985) famous findings. The question is not whether they were right or wrong. Rather, the idea that our brains are controlling us may be wrong. It is again so peculiarly dualistic. Just because there is activity in the motor cortex before there is conscious intention doesn't mean that we are not in control of ourselves. I would suggest that Libet's findings point us to the illusory nature of our ordinary sense of self. As Lancaster (2004) asserts, the 'I' is a 'construct, recreated from moment to moment in the mind' (p.164). Crucially, the surface-level construct does not negate that a deeper intentionality may inform our actions. We can draw on the writings of numerous psychologists,

psychotherapists and scholars to illuminate the nature of the two streams within, certainly Freud and Jung and those who followed in their footsteps: Jacques Lacan, James Hillman and Arnold Mindell, to name a few.

I would like to close with a reference to the work of Sheets-Johnstone (2009), who proposes that we think in movement. 'To be thinking in movement means that a mindful body is creating a particular dynamic as that very dynamic is kinetically unfolding. A kinetic intelligence is forging its way into the world, shaping and being shaped by the developing dynamic patterns in which it is living' (pp.33–34). So, when Libet's participants were asked to lift their fingers, they thought in movement: their intentions emerged as moving impulses, not as mental constructs divorced from action.

I believe that, as Sheets-Johnstone suggests, 'movement constitutes the thoughts themselves' (p.37). All our thoughts emerge and unfold through movement. Mental awareness and 'I' emerge as a secondary phenomenon from the primary stream of thinking-in-movement. Thus, the notion that the conscious mind cannot claim ownership of an intention until it has been initiated (put in motion) does not negate our agency or deny us control. For we are that embodied being.

There is no doubt that the conscious mind has its place, but it is also not the whole story. Indeed, if we live our lives believing that our conscious minds will serve us best when we make plans, envision our future and strive for fulfilment, we may cut ourselves off from the deeper living stream of which we are a part.

**Jessica Bockler PhD
ITA Professional**

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The importance of an autism assessment

As someone involved in diagnostic assessments of ASD, perhaps I can clarify concerns raised by Graham Collins (Letters, March 2015). An autism diagnosis can suggest important modifications to treatment even for someone with intellectual disability (see Holloway & Alladin, in press). Collins seems ignorant of NICE guidelines stressing the importance of early diagnosis and early intervention, and he repeats the theme that because people with intellectual disability and autism apparently have more in common, the differences can be ignored or are inconsequential for treatment.

The DSM-5 dimensional approach to ASD (though not without its critics) moves away from categorisation of people as do, for example, the DISCO (which Lorna Wing helped develop) and the 3Di assessment. Further, a more sophisticated multidimensional approach goes beyond a simplistic 'social deficits' characterisation of social dysfunction (Alladin, 2005). Individual support and more staffing are often obtained (as I have done in my autism work) by justifying the need to the local authority/commissioners and not simply because of a diagnosis of autism. If autism services are relatively better served, it is substantially because parents (and professionals like myself) joined the commendable National Autistic Society in a sustained campaign which resulted in the Autism Act 2009.

Collins should let ASD people speak for themselves (e.g. O'Halloran & Penrose, 2012 – a speech and language therapist mother and her daughter) about how a diagnosis inspired and empowered their lives and their families. Finally, it is unfortunate that Collins should imply that the late Lorna Wing would simply give an unwarranted autism diagnosis for the sake of expediency.

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Without wishing to monopolise the *Psychologist* letters pages in any way, I hope I can be allowed one more attempt to clear up misunderstandings over my views on the value of an autism diagnosis. It is unfortunate, if understandable, that diagnostic systems still rely on behavioural 'symptoms', but, as I have always maintained, we have to go beyond these in order to see what is uniquely 'autistic'. It is true that behaviours found in autism (including problematic social behaviours) are also found in other groups with developmental disorders, but I would claim that they are also found in typical development at certain times or under certain circumstances. Thus, there are no such things as 'autistic' behaviours; we all share behaviours because we are all humans. What is unique to autism is the origin of these difficulties in an inherent failure to engage socially and emotionally with others.

Those who do not have additional intellectual

difficulties can, with effective teaching, learn many of the adaptive behaviours, which the typically developing acquire intuitively or through social guidance. The point is, however, that this adds a significant cognitive load, making them vulnerable to high levels of stress and consequent mental health problems. My plea on behalf of those on the autism spectrum is that we try to understand them and thus learn to support them more effectively. That does not mean they necessarily need more or 'better' resources than those with intellectual difficulty alone. I have also always maintained that diagnosis is a poor determiner of services; these should always be based on individual need.

The problem is that, without training, we are liable to be misled in determining those needs when it comes to autism.

Professor Rita Jordan PhD OBE
Emeritus Professor in Autism Studies
University of Birmingham

obituary

Alex Mullan (1936–2015)

Alex Mullan passed away on Friday 23 January after a substantial battle with cancer. I was fortunate enough to know him from 1981 both as a professional colleague and a friend.

Alex came into psychology as a mature student after having worked in laboratories. This included working for a number of years in the Gallaher Tobacco Company in R&D. I think it would be true to say that they managed to smoke a good deal of what they produced over many years.

After completing his psychology degree he embarked on his training in clinical psychology. On qualifying as a clinical psychologist in 1983 he took up a post in Gransha Hospital and for the next seven years he was the entire clinical psychology service for a population of about 160,000 people. The next psychologist did not arrive until 1990. He continued to work in the Western Trust until he retired in 2004 at the age of 67. Never a man to take things lying down, at a time when many would have been only too glad to shed the burden of what was very hard work, he went 'kicking and screaming' and yelling ageism (with some justification) at the top of his voice. Even then he continued to work on in the Northern Trust, on temporary contracts, until he was nearly 70.

There is no doubt that Alex was a man of many parts! He had what could be described as an acerbic sense of humour, and anyone who had the pleasure of spending time with him socially enjoyed many a good laugh.

He had no interest in building empires and held no ambition to be a great leader. Indeed he possessed what many might regard



as a healthy cynicism in relation to managers and organisations. In truth he was someone who did not like to be managed, and as such could be a thorn in the flesh of those who tried to get him to do things that he thought were unimportant.

There were a good many unimportant things, according to Alex.

On the other hand, as a colleague and a client he was quite simply superb. He was extremely supportive to trainees and those less experienced than himself. Indeed he would go out of his way to help nurture and develop others.

His greatest strength lay in his work with and for clients. He had a burning desire to help the underdog, those with little or no voice, those who were emotionally and psychologically troubled... he invested his exceptional clinical skills in tirelessly trying to alleviate the pain experienced by his clients. Quite simply, in terms of his client work, Alex Mullan was forever going above and beyond the call of duty. What is more he went about this work in a very quiet and unassuming manner. Not only was he an outstanding clinician who cared passionately about his clients, but over the course of his career the numbers of people he helped were quite staggering.

In short, he was a man who touched the lives of many people in a way that made a difference.

Professor Gerry Cunningham CPsychol, AFBPS

*Consultant Clinical Psychologist & Systemic Psychotherapist
Eglinton, N. Ireland*

obituary

John J. Allen (1927–2015)

John Allen, who has died aged 87, began his Basic Grade career as the first ever clinical psychologist in Bradford in 1970 and retired 22 years later as Bradford District Clinical Psychologist in charge of 20 qualified clinicians working in various specialities and community settings.

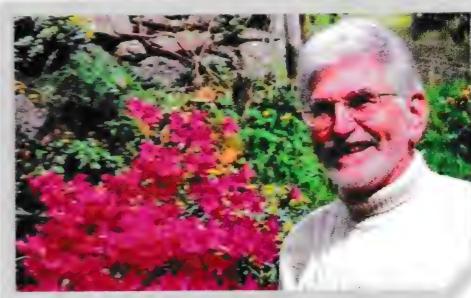
Due to childhood illness, John left school early and worked in clerical jobs, first in his native Scotland and then in London. He returned to education as a mature student with a growing family, obtaining his first degree at Dundee University followed by the Leeds Clinical MSc in 1970. His late start happened to coincide with a revolutionary period in the profession, when British clinical psychologists began to fight to be 'practitioners' as

well as 'scientists', to become independent of psychiatry and medicine and to deploy expertise in all healthcare settings. Always keeping these aims in mind when dealing with medics and managers, John gradually achieved most of them through being persuasive and clear-headed. He used opportunities as they arose and created new ones by networking with local hospitals, GPs, social services and universities, which enabled him to set up clinical psychology services in the main specialities in hospital and community settings.

Even as the head of a large department, based at Lynfield Mount Hospital, John carried a mixed-problem adult caseload with special expertise in obsessional behaviours and trans-sexuality. He used a

cognitive-behavioural framework for his formulations and client-focused eclectic interventions. He contributed to medical research as a member of the Pain Clinic based at Bradford Royal Infirmary and taught at both Bradford and Leeds Universities. He was an active member of the British Psychological Society. John was an inspiring head of department, a good leader, helpful and supportive of colleagues and a good teacher.

After retirement from the NHS in 1992, John taught psychology to undergraduates at Trinity and All Saints



College (now Leeds Trinity University). He finally retired, aged 70, and enjoyed foreign travel, learning German and meeting up with friends and colleagues, with whom he enjoyed eating out, having a good argument and having a good laugh.

John leaves a daughter, Alexis, two sons, Michael and Barney, and two granddaughters.

**Anna Greenwood
Margaret O'Connor
Otley
West Yorkshire
Liz Carrington**

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The business of people

UK growth and prosperity will falter without a better grasp of human behaviour and public attitudes, especially in the service sector of the economy. That's according to a new report from the Campaign for Social Science, produced with the support of the British Psychological Society and other bodies.

The report, *The Business of People: The Significance of Social Science over the Next Decade*, also calls for a new senior Whitehall social science adviser, more investment in 'Big Data', social science advice for MPs and members of the devolved administrations, and more explicit recognition for social science in government strategy.

Campaign chair Professor James Wilsdon said: 'Whatever the outcome of the general election, the challenges facing the UK demand the skills, insights and imagination of social scientists. Growth, health, security and well-being all depend on knowing how markets, organisations, individuals and households work, making investment in social science a critical component of the government's strategy for science and innovation. It's with confidence in the absolute necessity of social science that this report stakes its claim on scarce resources.' The report calls for the £4.7 billion annual budget for science and innovation to increase by at least 10 per cent in real terms over the next parliament, adding that 'Within Whitehall, cross-government thinking about demands for evidence and analysis should extend to training, data and international research collaboration.'

At the launch of the report, Greg Clark MP, Minister for Universities, Science and Cities, talked about the value of

social science. Professor Jane Elliott, chief executive of the Economic and Social Research Council, another speaker at the launch event, said: 'Social science is vital to a vibrant and fair society. The UK's world-class research enables us to better understand our communities, institutions and economy. The impact it has is extremely valuable in both human and economic terms.'

Several examples of 'public service' from psychologists are included in the report: Professor Tanya Byron's review on 'Safer Children in a Digital World', psychology graduate David Halpern's government service in founding the Behavioural Insights Team, neuropsychologist Huw Williams's studies on behalf of the Department of Health, and Professor Rory O'Connor's advice to the Scottish Government on suicide prevention. Numerous examples of psychological research and practice are dotted throughout, such as David Clark's work with Lord Richard Layard in advocating cognitive therapies, and Sir Cary Cooper's life's work on the psychological health and well-being of staff in organisations.

The report has a strong emphasis on working across disciplines, highlighting that 'the social sciences offer varied ways of understanding and measuring human behaviour and



Supporting coaches and athletes

A new app, developed by sports psychologists at Loughborough University to track the athlete-coach partnership, has been launched. Tandem uses short assessments from both athletes and coaches to assess the relationship between the two.

Tandem's lead developer Sophia Jowett outlined several examples of where the coach-athlete relationship has been significant in performance: 'For example, Andy Murray and Amelie Mauresmo, Toni Minichiello and Jessica Ennis-Hill, and Alex Ferguson and Cristiano Ronaldo. My aim has always been to make a considerable contribution where it matters, namely, in the sport field where the relationship unfolds. My wish is that as many coaches and athletes as possible "stop" and "notice" the power of the quality of coach-athlete relationships.'

Dr Jowett's work has focused on addressing how both a coach and an athlete's interpersonal feelings, thoughts and behaviours are mutually and causally interconnected, through the constructs of Closeness (represents the affective bond),



Sophia Jowett (right) is lead developer of Tandem

Commitment (reflects thoughts of maintaining a close relationship over time), Complementarity (outlines cooperative acts of interactions) and Co-orientation (presents perceptual consensus or being on the same wavelength with one another). 'Our early research was mainly qualitative and descriptive as the emphasis was to capture coaches and athletes'

reality of what the coach-athlete relationship. With the development of the Coach-Athlete Relationship Questionnaires (CART-Qs), our attention turned to exploring the correlates of the quality of the coach-athlete relationship. We have published over 80 peer-reviewed articles and these have provided a solid basis for the development of Tandem.'

To download the app visit the website: www.tandemperformance.com. A single assessment/report for

a coach or an athlete costs £25 and Combined assessments/reports for a coach-athlete pair cost £50. Dr Jowett has offered 25 per cent discount to British Psychological Society members using the code: BPSYCS25. To claim it go to www.tandemperformance.com/shop/choose-report (discount offer is valid until 30 April 2015). ER



DAN KITWOOD/THINKSTOCK

The UK's world-class research enables us to better understand our communities, institutions and economy

activity. But the common aim is getting inside the life of firms, households and individuals, and capturing trends and patterns. We call this report the "business of people" in the belief that there is deep unity among the disciplines.'

Daryl O'Connor, Professor of Psychology at the University of Leeds and a member of the report working group, said: 'The *Business of People* report is an excellent example of the social

sciences, including psychology, working together in order to attempt to influence the research and funding agenda over the next decade. It contains numerous far-reaching recommendations that are likely to directly impact on psychology now and in the future. However, for the report to have real public and political impact, it is important for colleagues to read it, talk about it and share it!'

Professor Jamie Hacker Hughes, President Elect of the *British Psychological Society*, said: 'The social sciences are among the most popular degree choices for undergraduates, and British social scientists punch well above their weight in terms of the number, impact and reach of publications. As a psychologist, I welcome this report which calls for research funding in the social sciences to be strengthened, for more social scientists to take up senior roles as advisers across government departments and for a social scientist to take up a chief adviser role to the government.'

The Campaign for Social Science was set up in 2011 to inform public policy, build coalitions and engage in measured advocacy. It sprang from the Academy of Social Sciences (AcSS), whose thousand Fellows are eminent academics and practitioners in business, government and civil society; 47 learned societies (including the *British Psychological Society*) are also members, representing 90,000 social scientists in varied settings. Over the next three months, the Campaign is running a series of 'roadshows' at more than 25 universities across England, Wales and Scotland, to promote discussion of the report's conclusions. JS

To read the report, see <http://campaignforsocialscience.org.uk/businessofpeople/>

HEALING THE HIDDEN WOUNDS

An IAPT programme aimed at veterans, their families and the families of serving personnel has been launched by charity Help for Heroes. Founded in partnership with the University of Exeter, it aims to treat common mental disorders (CMDs), which recent research has found to be twice as likely in people in the military.

An article published in *Psychological Medicine*, led by King's Centre for Military Health Research at the Institute of Psychiatry and discussed on the BBC Radio 4 *Today* programme in March, examined probable CMDs in serving military personnel compared to the general working population. The odds of mental disorder were around double in the military (tinyurl.com/ok973rs). Although much research has focused on post-traumatic stress disorder, it is disorders such as anxiety and depression that are more prevalent.

The research in question did use self-report questionnaires, with their attendant limitations, but the increased risk is alarming. Help for Heroes' Head of Psychological Wellbeing, Dr Vanessa Lewis, said that although it was impossible to predict who would go on to develop a CMD, there were ways to help minimise the risk or at least make it easier for people to report symptoms. Dr Lewis said: 'Educating people, raising awareness of mental health issues and stress management are all incredibly important. We have a group of people who may shy away from recognising symptoms of mental health problems. Stigma is still rife although it's getting better, but education and raising awareness are still vital.'

Lewis said the Ministry of Defence is raising awareness of stigma and provides support to active servicemen and women



MARIO DI LAURO/THINKSTOCK

'We have a group of people who may shy away from recognising symptoms of mental health problems'

who may have mental health problems. Once a person makes the transition from the armed forces into civilian life there are 10 veteran-specific NHS IAPT centres in England where staff have a deeper understanding of the effects of combat and military life.

The charity's service was set up as part of the Help for

Heroes Hidden Wounds Psychological Support Programme. The Step 2 CBT self-help programmes can be accessed over the phone, via Skype or face to face. It is delivered by psychological well-being practitioners, using workbooks and practical tools to help people understand and manage their emotions. ER

Podcasts – ear to stay

Our editor Jon Sutton reports on some new offerings, including our Research Digest PsychCrunch and a Society-funded series

More than a decade ago, writing for *The Guardian*, tech journalist Ben Hammersley coined the term 'podcasting' to describe the boom in amateur online radio.

Hammersley pointed to 'the increasingly loud and clear message from these audio producing sites: that this sort of thing is no longer the preserve of the professional, or the rich'.

Fast-forward to 2015 and Hammersley is providing editorial and voice support to a new podcast written and presented by his other half, the social psychologist and broadcaster Dr Aleks Krotoski. Funded by a 2014 Public Engagement Grant from the British Psychological Society, the 'N of Us' series discusses aspects of the history of social psychology.

Dr Krotoski said: 'In science, "N" is the size of the population under the microscope. In these podcasts, that's Us. What we think and what we do is influenced by the people around us. Here, we tell the stories about why we are the way we are – from why we love who we love, to when we're at our best.' The first episode examines social facilitation, the tendency for people to do better on simple tasks when there are other people

watching. Episode two tackles interpersonal attraction; episode three is on power.

'N of Us' is not the only new treat for your ears. Our very own Research Digest launched episode one of PsychCrunch, discussing studies on dating and attraction, in time for Valentine's Day. Digest editor Dr Christian Jarrett said: 'Podcasts are becoming increasingly popular and it's great to join the party with our own offering. We're thrilled that our first episode has been downloaded nearly three thousand times already, and we're currently brainstorming ideas for episode two.'

The Research Digest has also compiled a clickable list of psychology podcasts, including long-running favourites such as BBC Radio 4's *All in the Mind*, presented by psychologist Claudia Hammond, and newer efforts such as *Invisibilia* (reviewed in our March issue).

Also entering the fray are Mosaic Science, and Improbable Research (see this month's review pages). Mun-Keat Looi, commissioning editor at Mosaic, points to a resurgence in interest in podcasts thanks to the hugely popular



Serial. But he tells us: 'we've been thinking of podcasts and audiobooks for the past year... we know our stories are longform and by that definition some people find them hard to digest. Audiobooks are very popular because you can listen to a story while doing something else – walking, commuting, doing the housework. Next week's episode is a reading of 'The Mind Readers' – Roger Highfield's story of the scientists trying to communicate with those in a vegetative state [see also our June 2010 issue]. It touches on consciousness and issues of the mind, and is one of our most popular stories. It's also one of the longest, so I'm hoping the audiobook version will help it reach new audiences who were maybe reluctant to read through 9000+ words!'

The weekly Improbable Research podcast is 'all about research that makes people laugh, then think – research about anything and everything, from everywhere – research that's good or bad, important or trivial, valuable or worthless'. For plenty of examples from its curator, Marc Abrahams, keep an eye out for our May issue (as well as revisiting our April 2013 humour special).

Add in a new podcast network from Slate, and it has been quite a turnaround from 2011 (when a BBC article asked 'Podcasts – who still listens to them?') to current times (with the *Washington Post* announcing 'Podcasts are back – and making money'). Enjoy your listening, and do comment below or on our Research Digest list if we have missed your favourite psychological podcast. **I** For a hyperlinked version of this piece, see <https://thepsychologist.bps.org.uk/podcasts-ear-stay>

LAST CALL FOR MEDIA FELLOWS

The British Science Association's Media Fellowship scheme provides a unique opportunity for practising scientists, clinicians and engineers to spend three to six weeks working at a media outlet, such as *The Guardian*, *The Times* or the BBC. Every year up to 10 Media Fellows are mentored by professional journalists and learn how the media operates and reports on science, and how to communicate with the media and engage the wider public with science through the media.

After their media placement Fellows attend the British Science Festival in September, which provides an opportunity to gain valuable experience working alongside a range of media organisations from all over the UK in a dedicated British Science Association press centre. The Festival also offers opportunities to learn from a wide range of public engagement activities and network with academics, journalists and science communicators.

Applications are open until 3 April 2015, so you'll have to be quick off the mark. To apply, complete the form at www.britishscienceassociation.org/media-fellows-applications, and you'll need to provide a letter of support from your employer to say they are happy to release you to take part in the Fellowship. JS



'Radical' ban on p-values

The journal *Basic and Applied Social Psychology* has banned papers that contain *p*-values in an effort to reduce the amount of lower-quality research it publishes. Journal editors David Trafimow and Michael Marks have said they believe the ban on the null hypothesis significance testing procedure (NHSTP) will increase the quality of submitted articles by 'liberating authors from the stultified structure of NHSTP thinking thereby eliminating an important obstacle to creative thinking.'

Authors can still submit papers that contain *p*-values to the journal, but these, along with *t*-values, *F*-values and statements about significant differences will have to be removed before any work is published. The journal has also banned confidence intervals and stated that where Bayesian methods (where evidence is expressed in terms of degrees of belief) are used the editors will make case-by-case judgements on whether they will be allowed.

The journal now requires

that authors include strong descriptive statistics and encourages the use of larger sample sizes than 'typical in much psychology research'. It also suggests authors present frequency or distributional data where possible.

Reactions to the new guidelines have been mixed among psychologists and academics. Graham Smith (University of Northampton) said he was in favour of changing the ways psychologists analyse their data. Dr Smith added: 'The new statistics of effects sizes, confidence intervals and meta-analyses have many advantages over significance testing. Significance testing is widely misunderstood and frequently leads to unwarranted conclusions.'

'So I understand why some favour banning NHST; a clean break might force researchers to adopt the new statistics.' Smith warned that a previous ban in the *Memory & Cognition* journal 'didn't bring about lasting change. However, I sympathise with the

frustration of supporters of the new statistics who have essentially won the intellectual argument yet their good advice is ignored by most psychologists.'

Andy Field (University of Sussex) said he thought the flaws in significance testing were more widely known than ever before and that with the replication crisis within psychology it was inevitable that journals, and psychologists more generally, were exploring other options. He added: 'However, scientists tend to analyse data in the way they know how, so change will be slow. I think at the heart of this decision is a feeling that to make people change their ways something radical has to be done. This ban is radical. The positives are that they are encouraging authors to report raw data distributions and think about what their data actually show beyond a *p*-value. The downside is that their policy seems to be anti-inferential statistics full stop – no NHST, no CIs and no Bayes, unless we decide

it's OK on a case-by-case basis.'

Professor Field said he thought banning inferential statistics was a retrograde move. 'In the absence of those principles you are left with very little. In terms of the future, I think psychologists, as scientists, should be thinking more about the appropriate models to fit to our data rather than shoehorning our data into the pair of boots that we happen to like wearing. That doesn't necessarily mean locking the boots in the cupboard, it may be better achieved by a trip to a shoe-shop to see what prettier shoes there are on the market.' Others agreed, with cognitive scientist Jan de Ruiter tweeting that although 'NHST is really problematic', banning all inferential statistics is 'throwing away the baby with the *p*-value'. **ER**

I Coming up in the June issue of *The Psychologist* is a feature on 'building confidence in confidence intervals' by Dr Graham Smith and Professor Peter Morris

The acid test

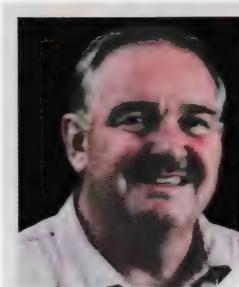
A crowdfunding site set up to raise funds to complete research into the effects of LSD on the brain has attracted more than one thousand backers in less than a week. The site (<https://walacea.com/campaigns/lsd>), set up by Professor David Nutt and his colleagues, is carrying out research as part of the Beckley Foundation's Psychedelic Research Programme.

The Beckley Foundation, a charity that carries out research into psychedelic drugs and consciousness, initially set out to raise £25,000 to complete an fMRI and MEG-imaging study into LSD on the brain. However after raising almost £50,000 in under a week the researchers extended their goal to include a further £50,000 to help run a study into LSD and creativity and problem solving.

The brain under the influence of LSD

has never been seen using modern imaging techniques: as a Schedule 1 substance, LSD for research purposes is highly controlled and expensive. However, Professor Nutt and his colleagues (Imperial College London) have already carried out a brain-imaging study of people who had taken psilocybin – the key ingredient of magic mushrooms – which showed the chemical plays a role in the default mode network, an area of the brain implicated in depression, OCD and Alzheimer's.

The 20 participants in the LSD study have already been scanned, and results from the initial imaging study will be released later this year once analysis is



Professor David Nutt

complete. Professor Nutt said in a statement: 'Despite the incredible potential of this drug to further our understanding of the brain, political stigma has silenced research. We must not play politics with promising science that has so much potential for good.'

Writing on the crowdfunding site, the scientists explain: 'It is difficult to find funding for psychedelic research as the subject is surrounded by taboo, but we hope that there are many of you who will be excited to provide funding so that this fascinating and important research project can be completed.'

I Read more from Professor Nutt and colleagues in our September 2014 hallucinogens special

Whistleblowers – heroes not headache

The recent Francis review of whistleblowing in the NHS has recommended promoting a culture where people feel safe to report concerns. But how have previous whistleblowers responded to the report? What is the future of whistleblowing, and what role do psychologists have to play?

The *Freedom to Speak Up* report (<https://freedomtospeakup.org.uk>) was carried out after concerns had been repeatedly raised over whistleblowing in the NHS, with a 2013 staff survey showing only 72 per cent of respondents confident that it was safe to raise a concern. Sir Robert Francis's review found mistreatment of whistleblowers in the NHS, as well as people who lost their jobs after raising concerns. Contributors frequently described a culture of fear, blame, defensiveness and 'scapegoating' when concerns were raised. The report

noted: 'These perceptions of the culture, real or otherwise, result in some staff refraining from raising concerns.'

Sir Robert writes in his report that a vast majority of those who wrote to the review spoke of bad experiences: 'Many described a harrowing and isolating process with reprisals including counter allegations, disciplinary action, and victimisation. Bullying and oppressive behaviour was mentioned frequently, both as a subject for concern and a consequence of speaking up.'

In concluding his review, Francis sets out 20 principles and actions for implementation by NHS organisations that provide healthcare. These include a suggestion that psychological support and counselling should be available to those who raise concerns. He writes: 'We heard harrowing accounts from people about anxiety and depression due to the stress

and repercussions of raising a concern, and in too many cases counselling appeared to have been promised but never materialised.'

The recommendations also include creating a shift in culture where staff feel safe to raise concerns and are free from being bullied. Structures need to support people in raising concerns formally and informally, and once a formal concern is raised these should be investigated promptly. 'Freedom to Speak Up Guardians' across organisations could give people someone to turn to.

The British Psychological Society submitted a response to the Francis review (tinyurl.com/bpsfrancis; see also box). Neuropsychologist Narinder Kapur, a Chartered Psychologist and Fellow of the Society, contributed to the response. Professor Kapur was dismissed from Addenbrooke's Hospital in Cambridge where he worked as a consultant, after raising concerns about patient care and safety. He suggested his role as a psychologist was probably central to his raising concerns: 'As psychologists we are trained to observe, analyse and try to understand behaviour, and also ways in which behaviour can be changed for the better. When concerns are raised, and when those who raise concerns are badly treated, usually there are key behaviours at the core,' he said.

Professor Kapur, who now works as a visiting professor of neuropsychology at University College London, added there was some hope for the future after the review and praised its recommendation of installing Freedom to Speak Up Guardians in the NHS, as well as the suggestion of ensuring psychological support was available to those who do raise concerns. He said there would be a role for psychologists in the future of whistleblowing and not only in providing support: 'Psychologists may be able to give advice on patient safety issues that underlie concerns, since many of these issues have a behavioural component. They may help to understand and modify management behaviour, which is often critically involved in the treatment of those who raise concerns.'

However, Kapur also said he had some major concerns over the report, adding that the lack of redress for the suffering of those who had previously raised concerns had caused sadness among many whistleblowers. 'The Francis Report does not go far enough to reward

BPS REACTIONS TO THE FRANCIS REVIEW

The British Psychological Society's response to the independent review had a focus on psychological safety of employees. After the publication of the review in February, Dr Joanna Wilde, who led the Society's contribution, said: 'Our profession must step up to help create these cultures. We can also make a significant contribution to recruitment and support for the Freedom to Speak Up Guardian roles advocated across the NHS. The recommendations also have scope to be reinforcing of good practice and de-escalation, rather than predominately focused on bad practice, which psychologically we know leads to more effective behaviour change.'

Dr Ian Gargan, Chair of the Society's Professional Practice Board, endorsed Dr Wilde's comments. He said: 'Practitioner psychologists have significant contributions to make offering individual support, education and training as well as stabilisation within the workplace for the whistleblower and the organisation as a whole. Specific points to highlight are: educating managers and HR professionals on how to communicate with those who whistleblow, to prevent deterioration in mental health. Psychology is particularly well placed to provide support for the stress and depression that we know these experiences have created for whistleblowers; defining mechanisms which support the whistleblower; and creating guidelines to support the organisation which may be affected by the consequences of negative information, having undermined confidence and well-being at work.'

Professor Kate Bullen spoke on behalf of the Society's Ethics Committee. 'If patient-centred care is a fundamental value of the NHS, this places an obligation on psychologists to advocate for the best available care on behalf of their patients. However, this obligation can only be demanded by employers, and by wider society, if a robust and supportive framework of care is provided for those who have the courage to whistleblow. Similarly, if managers are obliged to provide and support a system of support for staff, it is not unreasonable that they could expect staff not to raise vexatious or malicious claims against their employers, or their colleagues. There are reciprocal rights and responsibilities between staff and managers and also between colleagues. For many people who "blow the whistle" it is an act of desperation, arising from the frustration of working within a system where their concerns have not been accepted or acted upon. Providing robust and trustworthy processes which enable staff to raise their concerns are essential to pre-empt the need for whistleblowing. The Ethics Committee's role is to provide guidance through our Code of Ethics and Conduct, to hear the concerns of psychologists who contact the Society, provide a reasoned ethical opinion, and to direct them to appropriate sources of support if they decide to take their concerns forward.'

those who have raised concerns or in the future will raise concerns. I propose an award scheme, similar to that announced by the Prime Minister for those NHS staff who went to Africa to help with the Ebola crisis. These staff took risks to put the care of patients before their own well-being, and a few have suffered. NHS whistleblowers also took major risks, and many more have suffered.'

Kapur added: 'In that small group of sacked whistleblowers who met Jeremy Hunt and Simon Stevens in June 2014, four were black and minority ethnic staff. Yet, not a single member of the Francis Review Team was black and minority ethnic. That was an unfortunate omission.' The review did note 'a perception that BME staff are more likely to be referred to professional regulators if they raise concerns, more likely to receive harsher sanctions, and more likely to experience disproportionate detriment in response to speaking up.'

Dr Hayley Dare is former clinical lead of women's forensic directorate and consultant clinical psychologist at West London Mental Health NHS Trust. Despite a 20-year career in the NHS, she was sacked after raising concerns. Dr Dare told us that she followed the Trust's whistleblowing policy and spoke to the Trust's chief executive Steve Shrubb in March 2013. After falling ill with anxiety and severe depression, she took time off work and began discussing her return. However she soon received a three-line e-mail telling her she was being dismissed.

Dare told us that she had some concerns over the Francis review, and that not enough had been done to protect whistleblowers. 'The latest Francis Report did nothing to actually protect whistleblowers. If you ask senior managers, they don't want whistleblowers in the organisation. Whistleblowers are viewed as "headaches" that need to be silenced as quickly as possible. There may be a pseudo-investigation into claims, but when are these investigations truly independent? NHS career managers investigating for the Trust in which they work, are simply covering their own backs.'

Dare added that she was 'deeply

saddened' at how whistleblowers are treated. She said: 'In my view, I want the NHS to be flooded with whistleblowers. They are the staff who care about patients. Managers need to realise that the NHS was not set up to give them a job, it was set up to provide care to patients. Until managers are held truly accountable for their actions, no whistleblower is safe to speak out.'

Dare said that psychologists should be actively involved in trying to facilitate change, adding: 'I would very much like to see our profession actively involved in campaigning for true support for whistleblowers. This means lobbying Parliament, being actively seen and participating in national debates and organisations supporting change. The *Nursing Times* promoted the "Speak out Safely" campaign that many Trusts allege they are signed up to: as psychologists, we need

to be helping to identify what needs to happen to encourage staff to speak out, be it within schools, hospitals, prisons, etcetera. Don't just say you support whistleblowers, show it; after all next time you or your relative is undergoing a surgical procedure, wouldn't you like to truly know you were in safe hands?'

In a letter to *The Psychologist* (see p.255), Chartered Psychologist Margaret Charlton recommends Whistleblowers UK, a non-profit organisation run by whistleblowers for whistleblowers (see www.whistleblowersUK.org). 'The organisation can give confidential support and advice for those who are considering acting on their conscience before or after their situation escalates,' Charlton said. The website reminds visitors: 'Blowing the whistle is not something that anybody will have planned; they will have fallen into the position of revealing what they have discovered probably quite unexpectedly and they will either currently be worrying about the effects of what they are about to do – or undergoing the immense stress of what they have just done in disclosing their observations.' Featured prominently is the famous quote attributed to Edmund Burke: 'The only thing necessary for the triumph of evil is for good men [and women] to do nothing.' ER



Point of Light award

A Chartered Psychologist from Merton has been named a Point of Light by Prime Minister David Cameron. As the CEO and Founder of STEM4, Dr Nihara Krause has pioneered education workshops to tackle young people's mental health issues.

Dr Krause and her team of volunteers teach workshop participants how to develop emotional resilience and how to spot warning signs of eating disorders, depression and anxiety, self-harm and addiction, as well as helping them learn some self-help strategies. Schools have benefited from resilience programme guidelines including her own MindYour5 guide, a 'five a day' for improved mental health. Resources are available on the www.stem4.org.uk website.

The clinical psychologist is the 225th winner of a Point of Light award, which recognises people who are making a change in their community and inspiring others. Each day, someone in the country is selected to receive the award.

Dr Krause was inspired to take action to support young people's mental health in 2010, after a 15-year-old living in Merton died after battling with anorexia nervosa. She became involved in supporting the girl's school, family and friends as they grieved. On 1 March, Self-Harm Awareness day, STEM4 released their first smart phone app, 'Calm Harm', an evidence-based treatment tool to help teenagers manage self-harm behaviours.

Dr Krause said: 'It is an honour to be recognised for doing something I am very committed to. I have to thank STEM4 volunteers who have enabled us to reach out to teenagers in need and to the community who have been so responsive to us. This award helps raise the importance of the need to stem teenage mental ill health through early awareness and accessible validated intervention.' JS

Digital technologies in health change

The University College London Centre for Behaviour Change has hosted its first-ever conference, around the theme of digital technologies in health behaviour change initiatives. The two-day event, at Senate House in London, drew speakers from an array of disciplines, from psychology and medicine to computer science and game design.

During an enlightening session on the 'gamification' of behaviour change initiatives, game designers and behavioural scientists spoke of some of the ways they have sought to encourage behaviour change. Psychologist Professor Pam Kato (Coventry University), Director of Research at the university's Serious Games Institute, spoke about the development of Re-Mission – a game aimed at young cancer patients. The main character of the game travels through the human body carrying out missions in different parts of the anatomy. Kato explained that in a trial of 374 young cancer patients, in those who used the game there was an improvement in cancer knowledge and self-efficacy, as well as adherence to medication.

Games developer at PlayLab London, Simon Fox, told the assembled audience about a new game app that aims to help people with anxiety and panic disorders. The game gives players tasks to complete while being guided through structured breathing exercises. Fox said he had been inspired to develop Flowy after



The two-day event, at Senate House in London, drew speakers from an array of disciplines, from psychology and medicine to computer science and game design

experiencing a severe panic attack himself six years ago, adding that although effective treatments are available on the NHS only 15 per cent of people are seeking such treatment. The app has been through a randomised control of 63 people with help from psychologist Quynh Pham, finding a decrease in self-reported anxiety and hyperventilation scores as a function of the time Flowy

was used for, as well as an increase in self-reported quality of life.

During a session on mobile health, psychiatrist Andreas Fonseca (Virtually Free Ltd) spoke about his development of an app to help people tackle arachnophobia. He said he wanted to develop an app to deliver a proven form of exposure therapy – systematic desensitisation. He said he had been frustrated by meeting patients who could not access therapies they needed. The app shows gradually more realistic spiders to users, ending with a tarantula shown in augmented reality, by which while looking through the phone screen it seems a tarantula is on your hand or in the room.

Closing the first day of the conference was keynote speaker Bonnie Spring (Northwestern University), a clinical health psychologist. She spoke about the 'tortoise vs. hare' speed difference in the evolution of technology and the evaluation of behaviour change apps: although there are thousands of weight-loss apps available, very few have been evaluated for their effectiveness. Spring said that in a recent review only six out of 21 were found to have a significant benefit as a health intervention. She also argued that, in digital approaches to changing behaviour, it is not the 'widgets' that make the difference but the behaviour change principles themselves – and such principles may work very differently in a digital environment. In one of her own



Andreas Fonseca spoke about his development of an app to help people tackle arachnophobia

HOW SEXUAL DESIRE WORKS

weight-loss interventions, Spring found that although technology could be used as a novel way to encourage healthy behaviours, self-efficacy decreased when participants were actively trying to lose weight. Spring concluded: 'We have apps that make [losing weight] engaging and reinforcing, but the reality doesn't always translate into a health benefit and it's demotivating for people.'

To begin the second day of the conference, the Centre for Behaviour Change launched its new venture with Bupa, the Global Institute for Digital Health Excellence (GLIDHE; see p.191, March issue). The initiative aims to bridge academic and private company worlds to test behaviour change theories on a larger scale. GLIDHE was developed following research collaborations between Bupa's Group Digital Director Alan Payne, UCL Professor of Health Psychology and Associate of the Centre of Behaviour Change Robert West, and UCL Professor of Computing Science Philip Treleaven. Professor West pointed to the disparity between where research is most heavily focused (Western English-speaking countries) and where it is most needed (Africa and India). He said that, with Bupa's connections with the World Health Organization, behaviour change initiatives developed at UCL could benefit these countries. West added that smoking prevalence in India was much higher than America and Europe and that people in such countries were being greatly underserved. Initially GLIDHE will look to test smoking cessation initiatives, following positive trials with West, whose work in developing SmokeFree 28 (SF28) formed the basis for the first GLIDHE project, BupaQuit.

The final sessions of the conference discussed what academia can learn from industry and vice versa, how behaviour change initiatives can inform policy, the ethical dilemmas sparked by new technologies, and wearable devices and the internet of things. In this latter session many different wearable devices that monitor biofeedback were discussed, including a set of heart and blood pressure monitors, designed by Qardio, which were encouraging more people to stick to regular self-monitoring of heart conditions. Another company, TicTrac, has developed a comprehensive system to use information from wearable technologies to give feedback for behaviour change. **ER**

The book *How Sexual Desire Works* by BPS member Frederick Toates, Emeritus Professor of Biological Psychology at the Open University, has been selected as the winner in the 'Psychology' category of the 2015 PROSE Awards for Professional and Scholarly Excellence. The PROSE awards are presented annually by the Professional and Scholarly Publishing Division of the Association of American Publishers to recognise the very best in professional and scholarly publishing in over 40 categories.

Published last year by Cambridge University Press, *How Sexual Desire Works* asks how we can understand the rich and puzzling variety of different sexual desires,

ranging from that associated only with exclusive monogamy, through fetishes to the extremes of addiction and desire linked to violence. Professor Toates told us: 'Recent advances in psychology and neuroscience allow the beginnings of a much fuller understanding of such a spectrum of tastes in terms of how a few identifiable processes of the brain/mind can combine in a variety of different ways. Research into the brain's chemical messengers, particularly dopamine, is yielding some crucial insights. The book gives an up-to-the minute survey and integration of the current understanding of sexual desire.'

Action on 'political and economic abuses'

A team of psychologists is aiming to start a conversation about the impact of austerity on services, individuals, communities and society. The Psychologists Against Austerity group was officially launched in March after many of its members felt increasingly frustrated with supporting people who had been the victim of a range of what it calls 'unfair political and economic abuses'. Representatives had a letter on the topic published in our March issue.

Carl Walker (University of Brighton) told *The Psychologist* that the group not only aimed to start a discourse around austerity matters in psychology but also wanted to publicise links between austerity policies and mental distress, using psychological evidence, which, he said, has not been prevalent in the debate so far. Dr Walker led the European Community Psychology Association task force on austerity and mental health. He said: 'Sally Zlotowitz and I discussed trying to mobilise the London community psychology network to see if any people would be involved in some austerity projects. We called a meeting last summer and a group of interested psychologists worked together to decide on, design and publicise the current campaign.'

The launch event, at the House of Lords, saw a talk from Richard Pemberton from the British Psychological Society's Division of Clinical Psychology, as well as speakers on experiences of austerity from

Disabled People Against Cuts and disability rights campaigners Black Triangle. Laura McGrath (University of East London) introduced the new group's briefing report.

Walker said the group will meet twice a month with the short-term aim of mobilising psychologists around the country to play a more visible role in the austerity discourse in the time leading up to the General Election. 'This could include contributing to our stories of everyday austerity on our website, writing to their local MPs and writing to their local papers to try to provide their experience on the impacts of austerity and the damaging languages of austerity on the people they work with. We feel that austerity economics and the discourses proliferated in the public domain have been damaging. Psychologists could play a role in bringing a degree of professional legitimacy to rebalancing some of the fictions that have been popular in the public domain.'

The group is planning a Week of Action on the week beginning 20 April, aimed at those who work in psychological services. They plan to have a set of five actions that people can carry out during the week, as well as encouraging people to share their experiences on social media and on the group's website at <https://psychagainstausterity.wordpress.com>. **ER**

I See also our September 2013 'Opinion' feature and April 2014 special issue.

Visual illusions foster open-mindedness

From sworn witness accounts of alien visitations, to deep-rooted trust in quack medical treatments, the human trait that psychologists call 'naïve realism' has a lot to answer for. This is people's instinctive feeling that they perceive the world how it is, encapsulated by the saying 'seeing is believing'. The truth, of course, is that our every perception is our brain's best guess, built not merely with the raw material of what's out in the world, but just as much with the bricks of expectation, hope and imagination.

William Hart and his colleagues at the University of Alabama propose that naïve realism not only inspires false confidence in what we see, but also more generally in our beliefs and assumptions. Based on this logic, the researchers tested whether explaining to people about naïve realism, and showing them the unconscious, fallible mental work that leads to their unstable perceptions, might have knock-on effects, making them more open-minded and more doubtful of their assumptions about a person's character.

Nearly 200 students took part and were split into four groups. One group read about naïve realism (e.g. 'visual illusions provide a glimpse of how our brain twists reality without our intent or awareness') and then they experienced several well-known, powerful visual illusions (e.g. the Spinning Wheels, shown here, the Checker Shadow, and the Spinning Dancer), with the effects explained to them. The other groups either: just had the explanation but no experience of the illusions; or completed a difficult verbal intelligence test; or read about chimpanzees.

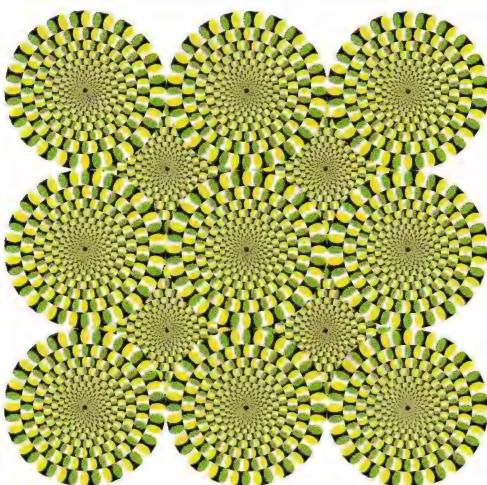
Afterwards, whatever their group, all the participants read four vignettes about four different people. These were written to be deliberately ambiguous about the protagonist's personality, which could be interpreted, depending on the vignette, as either assertive or hostile; risky or adventurous; agreeable or a push over; introverted or snobbish. There was also a quiz on the concept of naïve realism.

The key finding is that after reading about naïve realism and experiencing visual illusions, the participants were less certain of their personality judgements and more open to the alternative interpretation, as compared with the participants in the other groups. The participants who only read about naïve realism, but didn't experience the illusions, showed just as much knowledge about naïve realism, but their certainty in their understanding of the vignettes wasn't dented, and they remained as closed to alternative interpretations as the participants in the other comparison conditions.

'In sum,' the researchers said, 'exposing naïve realism in an experiential way seems necessary to fuel greater doubt and openness'.

At the time of writing, the internet is abuzz with talk of a dress that looks different colours to different people, with numerous scientific explanations on offer. It's a bit like the main intervention condition in this study writ large – experience of an illusion, combined with explanation that shows the hidden work of unconscious processing. Might this internet meme foster greater openness in society?

Before we get carried away, more research is needed to test the longevity of these effects, and how far they generalise. It's possible, for example, that people's core beliefs would not be affected in the same way. Nonetheless, the researchers are hopeful: '...the present effects may have implications for fostering a more tolerant, open-minded society,' they concluded. **CJ**



In Cognition

Recruiters think they can tell your personality from your CV: they can't

In *Journal of Business and Psychology*

Recruiters are poor at inferring an applicant's personality from their CVs, but that doesn't stop them from jumping to conclusions on the back of their flawed assumptions. That's according to a new study that involved over a hundred professional recruiters evaluating pairs of CVs.

The US-based recruiters estimated applicant personality from the limited information in short two-page CVs. Their estimates were poorly correlated with the self-ratings made by the MBA students who'd written the CVs. But the recruiters appeared to rely heavily on these flawed estimates when drawing conclusions on hireability, as their personality estimates accounted for almost half of the variance in their decision making. Meanwhile the students' self-ratings – a more reliable source of information on true personality – were a poor predictor of whether the recruiters would favour them.

Another experiment involved 266 participants recruited online and asked to play the role of recruiter. This time, the set of CVs were broken down into their component parts, revealing that a range of elements can provoke personality judgements, from the look and feel of the CV (setting off recruiter inferences about conscientiousness), to mentions of voluntary activities (triggering assumptions of extraversion and agreeableness) and computer skills (interpreted as a sign of openness to experience).

The participants in this experiment were most likely to form conclusions about conscientiousness, extraversion and openness to experience and, like the professional recruiters, the more they saw an element having something to say about personality, the more relevant they saw it for assessing hireability.

As a CV is often the first impression an applicant gives to a potential employer, it's worth understanding the assumptions they make, argue Gary Burns and his colleagues, who conducted these experiments. The researchers suggest taking time to give a fair impression of yourself, and recommend some less obvious take-aways such as giving detailed information about your education, describing your extracurricular activities, and steering clear of unusual fonts. **AF**

The six forms of resistance shown by participants in Milgram's notorious 'obedience studies'

In *Journal of Social Psychology*

When discussing Milgram's notorious experiments, in which participants were instructed to give increasingly dangerous electric shocks to another person, most commentators take a black or white approach.

Participants are categorised as obedient or defiant, and the headline result is taken as the surprising number of people – the majority – who obeyed by going all the way and administering the highest, lethal voltage.

A new study takes a different stance by looking at the different acts of resistance shown by Milgram's participants, regardless of whether they ultimately completed the experiment. This isn't the first time researchers have explored defiance in the Milgram paradigm (for example, see Jerry Burger and colleagues' 2011 study, and last year's reinterpretation of the findings led by Alex Haslam: links on blog), but it's the most comprehensive analysis of resistance as revealed through the dialogue in Milgram's original studies.

Sociology doctoral researcher Matthew Hollander has purchased and transcribed audio recordings of 117 of Milgram's participants taken from different versions of the seminal 1960s research. He has carefully analysed the three-way conversational interactions between the experimenter, each participant playing the role of 'teacher', and the 'learner' (actually an actor) who was subjected to the

shocks and cried out in pain and protest. From these interactions, Hollander has identified six different forms of resistance, three implicit and three explicit.

The three implicit forms of resistance were: silences and hesitations (e.g. after the experimenter has instructed the participant to continue with the process); imprecations (often in response to cries from the learner); and laughter. The claim about laughter is controversial because earlier commentators have interpreted laughter by Milgram's participants as a worrying sign of sadism. Hollander is interested in those specific instances when participant laughter followed commands from the experimenter – this laughter, he believes, was an act of resistance because it was intended to show the

participants' in which the participant stated he or she did not want to continue.

Comparing participants who ultimately obeyed all the way to the highest shock, and those who refused to complete the experiment, there are some revealing similarities and differences in the forms of resistance they used along the way.

Most participants who completed the experiment, and those who refused, used the implicit 'wait and see' resistance strategies, which Hollander says were designed to delay the continuation of the experiment, presumably in the hope that the experimenter would halt proceedings. But only the participants who, at some stage, refused to complete the experiment, used the explicit strategy of addressing the learner – effectively granting him the authority to dictate whether the process should continue. These defiant participants also used more 'stop tries' – 98 per cent used at least one, compared with just 19 per cent of the participants who ultimately completed the experiment.

Hollander said his conversation-analytic approach promised to 'open up new perspectives on an old experiment whose legacy lives on'. What's more, he believes the same approach could usefully be applied to other settings. By improving our understanding of the interpersonal dynamics of authority and the resistance to authority, such research 'could save lives and empower potential victims', he said. CJ



participant's ability to cope with the difficult situation.

The three explicit forms of resistance were: addressing the learner (e.g. asking him if he's happy to continue); prompting the experimenter (e.g. either querying whether it's necessary to continue, or telling him that the learner is in pain); and finally 'stop

Have you heard...



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Some student–professor pairings lead to ‘unusually effective teaching’ (and it’s possible to predict which ones)

In *British Journal of Educational Psychology*

In the near future, students could be presented with a series of video trailers of different professors at their university. Based on their ratings of these videos, the students will be paired with the professors who provide the best fit. The outcome will be superior learning and greater student satisfaction.

That's the promise of a new study that asked 145 psychology undergrads to rate six-minute teaching videos of 10 different professors, and then to rate their experience of an actual 40-minute live lecture with those same professors taken several weeks later. The students were also quizzed on the content of those lectures to see how well they'd learned.

Jennifer Gross and her colleagues explain that student evaluations of professors are made up of three key factors: each professor's actual ability (this component tends to correlate across ratings given by different students); each student's rating bias (this

component correlates across the ratings given by the same student to different professors – for example, some students are more lenient in their ratings than others); and relationship effects.

This last component is one of the key points of interest in the new study. It pertains to the specific fit, or not, between a professor and a student. When there is a good fit, this leads to unusually high ratings by that student for the professor, above and beyond what you'd expect given the student's usual rating bias, and given the level of ratings the professor usually attracts.

To zoom in on these relationship effects simply requires factoring out each student's rating bias, and each professor's average rating across students.

The exciting finding is that the researchers were able to use the



What do clients think of psychotherapy that doesn't work?

In *Psychotherapy Research*

Psychotherapy works for most people, but there's a sizeable group for whom it's ineffective or, worse still, harmful. A new study claims to be the first to systematically investigate what the experience of therapy is like for clients who show no improvement after therapy, or who actually deteriorate.

Andrzej Werbart and his colleagues conducted in-depth interviews with 20 non-improved clients (out of a larger client group of 134) who were enrolled in individual or group psychoanalytic psychotherapy at the former Institute of Psychotherapy in Stockholm. Seventeen of these clients showed no symptom improvement after an average of 22 months' therapy, and three

showed deterioration. The clients had an average age of 22 at the treatment start, and 17 of them were female. Their problems included mood disorders, relationship problems and self-reported personality disorders. The interviews took place at the end of the course of therapy, and then again one and half years later.

The researchers transcribed the interviews and identified a key central theme: 'spinning one's wheels' as exemplified by this client quote: 'When I think back on the therapy, I get the feeling that I often sat and talked; sometimes something important came up, but often it felt like it was pretty much just spinning my wheels.'

What other messages were

distilled from the interviews? The clients had largely positive views of their therapists, but they saw them as distant and not fully committed. A recurring issue for the clients was feelings of uncertainty over the goals of therapy and the methods to achieve those goals. Many had expected a more challenging, confrontational, structured style of therapy.

The researchers said the 16 therapists (10 female; average age 53), many of them highly experienced, who'd worked with these non-improved clients, may have been guilty of sticking too rigidly to traditional psychoanalytic techniques: 'The patients' descriptions of therapists' silence and passivity together with a focus on childhood experiences and deep roots of presented problems resemble a caricature of psychoanalytic psychotherapy, but unfortunately the picture may be accurate,' they said.

The researchers urged therapists to address their clients' treatment preferences and expectations – such reflection could have led to the realisation that a more 'directive, task and action-oriented' form of therapy may have been more appropriate for these clients (conversely, other research has found that

dissatisfied CBT clients tend to say they would prefer an approach with more emphasis on reflection and understanding). Clients need to be involved in setting the goals of therapy and educated about what the process will entail, the researchers added. But also, 'the therapist needs to learn to be the unique patient's therapist'.

Previous research has already established that therapists are poor at identifying when therapy is not working. Werbart and his team said that 'formalised feedback' based on client surveys during therapy 'can be a less threatening way to start discussions on negative and hindering therapy experiences'.

On a positive note, between the end of therapy and later follow-up, more than half the non-improved clients showed beneficial decreases in their symptoms. Such ongoing change was not observed for clients who showed more immediate improvements after therapy, suggesting these changes were not a mere consequence of maturing. 'Rather, the conclusion is that non improvement at [therapy] termination does not imply lasting symptoms,' the researchers said. AF



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students' ratings of, and their mood during, the six-minute trailers to forecast how they later rated the actual lectures, including predicting which professors got the highest average ratings after the lectures, and predicting relationship effects.

This result is important, the researchers explained, because the students' memory for material taught in a given lecture was independently related both to that lecturer's average ratings (some lecturers are better than others), but also to the specific relationship effects (i.e. whether the student in question had given that lecturer unusually high ratings – the sign of a good professor/student fit).

'These findings support the possibility of developing online systems that would provide personalised recommendations that specific students take courses from specific professors,' the researchers said.

However, they acknowledged that their results need to be replicated, and they also outlined some limitations of the study. This included the fact they'd carefully compiled the six-minute trailers to showcase each professor's teaching style (a time-consuming endeavour); that the live evaluations involved just one lecture rather than an entire course; and that the professors' teaching skills were confounded with the topics they taught. CJ

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Jokey team meetings are more productive, so long as people laugh along. The finding comes from an analysis of videos recorded at two German companies. Moments after the laughter died down from a joke, teams were more likely to propose new ideas, ask questions or offer praise. *Journal of Applied Psychology*

Saving information to a computer frees your mind to learn new material. That's according to researchers who tested students with word lists. It's thought the digital saving process facilitates deliberate forgetting, freeing up mental resources for the new information. *Psychological Science*



People are extremely poor at drawing the Apple logo from memory, even those who are Apple users and are exposed to the logo every day. Researchers say frequent exposure breeds confidence in memory, but this isn't matched by accurate recall. One explanation is that we store a gist memory of the logo, rather than memorising its details. *Quarterly Journal of Experimental Psychology*

By age three, young girls already show a bias towards thin people, according to a US study. The research found that three-year-olds attributed more positive adjectives to thin figures than fat ones, and they also favoured images of thin girls when selecting a best friend. *Eating Disorders*

Female serial killers often have caring professions, and most often they kill for the thrill of it. That's according to a new analysis of 64 historical cases in the US. The authors warn that cultural assumptions that women aren't violent can delay the detection of female serial killers. *Journal of Forensic Psychiatry and Psychology*



Asked about personal and public flashbulb memories (e.g. the moment they heard of a friend falling pregnant, or the moment they heard Michael Jackson had died), survey participants said the memories helped bolster their self-identity and enhanced social bonds. The more personally significant the memory, the stronger these functions. *Memory*

People who feel insecure about their group membership are more likely to cheat for the team as a way to regain popularity. The finding came from a task involving impossible anagrams. Participants with a high need to belong, and who heard they were going to be excluded by their team, were especially prone to claiming they'd solved the puzzles. *Journal of Applied Psychology*

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The exciting side of boredom

Our journalist Ella Rhodes meets psychologists who think boredom has had a bad press

'If life, in the desire for which our essence and existence consists, possessed in itself a positive value and real content, there would be no such thing as boredom: mere existence would fulfill and satisfy us. As things are, we take no pleasure in existence except when we are striving after something...or when engaged in purely intellectual activity... Whenever we are not involved in one or other of these things but directed back to existence itself we are overtaken by its worthless anti vanity and this is the sensation called boredom.'

In his essay *On the Vanity of Existence*, Schopenhauer, quite ominously, suggested that boredom acted as a reminder of the meaninglessness of human existence. Although I'm cursed with a high propensity for boredom, I can't say it ever left me with existential doubt, more just a great deal of irritability. We have all been there, each of us has felt that aching desperation for something to do, something with meaning and that will engage us in just the right way. A book may require too much mental energy; we'd go for a walk, but the day is a grey reminder of our mental state. Thrashing around in our stagnation, we only wriggle deeper into that pit of irritability.

Boredom has been much spoken about by philosophers, authors and psychologists, but perhaps remains understudied. Why, you may ask, would we want to look any deeper into a state

that seems something of a luxury in the context of busy modern lives, where distractions abound? Perhaps because boredom might have had a bad press – could it have a positive side?

The trap of quicksand

Professor John Eastwood and his colleagues at York University in Canada have been researching boredom for over a decade. They define it as 'The aversive experience of wanting, but being unable, to engage in satisfying activity' (Eastwood et al., 2012). Boredom can be defined in terms of attention: according to Eastwood, it occurs when we are not able to engage our attention with internal or external information (thoughts and feelings, and environmental stimuli respectively) required for participating in satisfying activity, are focused on the fact we can't engage attention and participate in satisfying activity, and attribute the cause of our aversive state to the environment.

In one study (Eastwood et al., 2007) 204 undergraduate students completed questionnaires about their susceptibility to boredom, and about their emotions, including questions on describing feelings and being externally focused. The students who said they suffered from more boredom were also more externally

"could we use this longing for meaning as a way to unlock creativity?"

focused and reported difficulty identifying their emotions.

Eastwood and his colleagues said this shows that our natural tendency to seek outside stimulations and distractions when we're bored is the wrong solution. 'Like the trap of quicksand, such thrashing only serves to strengthen the grip of boredom by further alienating us from our desire and passion, which provide compass points for satisfying engagement with life', they said. Instead the researchers suggest treating boredom as an opportunity to 'discover the possibility and content of one's desires'.

'People are very harsh towards those who get bored'

Professor Eastwood became interested in boredom through his work as both a clinical and cognitive psychologist. He told me that he had been struck by the fact that boredom was a common state that all of us have experienced, some to a debilitating extent, but it remained an understudied area. He suggested it might have been overlooked precisely because it is such a common state.

He said: 'When I started talking to people about my interest in studying boredom, in around the year 2000, I got all kinds of interesting reactions. Some people thought it was weird, crazy or unworthy of study, or I got quite strong reactions from people who said "I'm never bored, people who get bored are weak characters" or people would say "That's really cool, I struggle with boredom and it would be great to understand it". I wanted to explore something that had been overlooked, and from a personal point of view it gave me space to play. If you research a topic that has been looked at a lot in the past the parameters have already been defined by previous work.'

The topic is far from trivial. Indeed, Eastwood explains that part of the appeal is that boredom links with broader questions about how we make life

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meaningful for ourselves. 'Clinically, I work with people, especially young men, who talk about this "failure to launch". Maybe they're still living at home in their parents' basement and playing a lot of video games... their chief complaint is this unremitting boredom. We find as a culture people are very harsh towards those who get bored. They get upset or judgemental, where they wouldn't react like that to people with another mental health issue.'

As well as this general cultural feeling that boredom is a 'bad thing', Eastwood's group has also found a link between trait boredom and depression and anger (Mercer-Lynn et al., 2013), and other researchers have found links between boredom and many seemingly negative personality traits, including pathological gambling (Blaszczynski et al., 1990), bad driving (Dahlen et al., 2005), sensation seeking and impulsivity and even lower levels of self-actualisation (McLeod et al., 1991).

Others have looked into the role of boredom proneness in anger expression and aggression. Eric Dahlen and his colleagues (Dahlen et al., 2004) had 224 undergraduates complete measures of boredom proneness, impulsiveness, sensation seeking, anger expression and aggression. They concluded that boredom

because of a lack of external stimulation predicts a person's propensity to experience anger, and to show maladaptive anger expression, aggression and deficits in anger control.

All of this makes rather sobering reading for someone with this personality trait! But can boredom serve any useful function?

Does boredom serve a function?

Could boredom act as the spur for people to search for meaning in their lives? In one set of studies, conducted in Ireland by Dr Wijnand van Tilburg (University of Southampton) and former colleague Dr Eric Igou (University of Limerick), the researchers found that the 'search for meaningful engagement' that boredom sparks is expressed through greater weight being placed on group membership (known to give people a sense of meaning in life). Boring activities led to ingroup favouritism and derogation of outgroup members. In one of these studies participants who were asked to draw many spirals (a boring task) became more lenient towards a criminal offence committed by an ingroup member, an Irishman, but became harsher in their judgement of a criminal outgroup member, an Englishman. The researchers

concluded that this 'polarisation' of in- and outgroup attitudes could be attributed to bored people's increased desire to engage in meaningful behaviour.

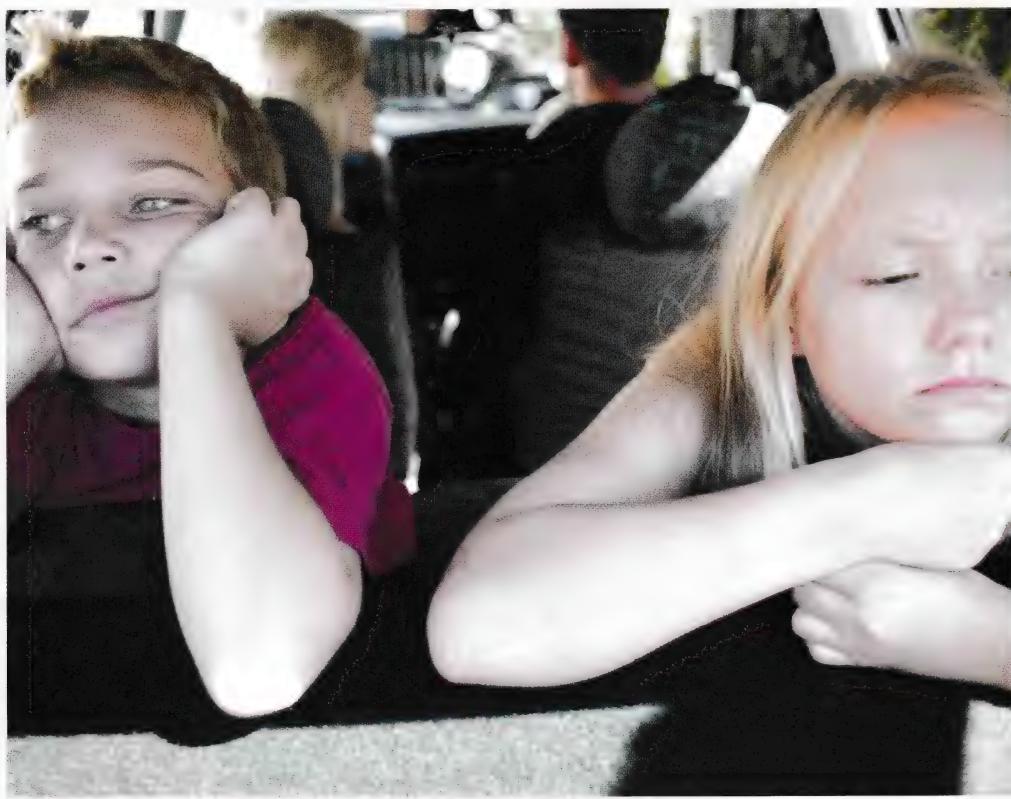
Dr van Tilburg told me: 'Generally speaking, boredom feels unpleasant, and it involves feeling restless and unchallenged at the same time. In our research we have found that boredom fulfills an important function: boredom makes people keen to engage in activities that they find more meaningful than those at hand. Essentially, the unpleasant sensation of boredom "reminds" people that there are more important matters to attend to than those at hand.'

This function of boredom can have both desirable and undesirable consequences, depending on the context in which it is experienced. Dr van Tilburg added: 'Essentially, the emotional experience of boredom makes people realise that there are more valuable things to do. This can be very helpful when it is important to change behaviour and reduce monotony. On the other hand, if a dull activity really needs to be done, then feeling bored is perhaps not very helpful... whether boredom is "good" or "bad" really depends on the situation. Above all, however, boredom appears to serve an important psychological function – it makes people rethink what they are doing in favour of actions that, at least in the moment, are seen as more meaningful... for better or worse.'

Boredom can make you creative

Although boredom is an unpleasant mental state to find oneself wrapped up in, could we actually use this longing for meaning as a way to unlock creativity? Kate Greene, a freelance journalist who spent four months in Hawaii on a simulated Mars mission for NASA, has written: 'On Mars I learned that boredom has two sides – it can either rot the mind or rocket it to new places' (tinyurl.com/q8992wx).

Dr Sandi Mann (University of Central Lancashire) has been looking into suppressed emotions, especially at work, since her PhD. She told me: 'I started on anger, which is the most commonly suppressed. I then moved to the second most commonly suppressed emotion –



'I am quite happy when my kids whine that they are bored!'

boredom

boredom. Boredom is a fascinating emotion because it is seen as so negative yet it is such a motivating force! It is a paradox.'

Mann says she gets bored at times, like everyone does. But I am also acutely aware that being bored is not the bad thing everyone makes it out to be. It is good to be bored sometimes! I think up so many ideas when I am commuting to and from work – this would be dead time, but thanks to the boredom it induces, I come up with all sorts of projects.'

Mann says the most exciting thing she has found about boredom is that it can make people creative. In one recent study (Mann & Cadman, 2014), she had participants either carry out a boring writing activity – copying out phone numbers from a telephone directory, or not – and then complete a creative task, in this case coming up with as many uses for two polystyrene cups as possible. Participants in the 'boring' condition came up with significantly more uses for the polystyrene cups compared to controls. A second study again found that boring activities led to increased creativity in the final tasks, particularly a 'boring reading' condition.

'It is something that intuitively we

knew,' says Mann about her findings. 'Also that people eat chocolate when they are bored at work... again, not a surprising find, but the extent to which boredom is propping up the confectionery industry is staggering!'

Mann also believes it is important for children to be bored. 'Unlike so many parents today, I am quite happy when my kids whine that they are bored! Finding ways to amuse themselves is an important skill.' This idea was explored by psychoanalyst Adam Phillips in a 1993 essay, exploring the developmental merits of allowing children to form their own sense of purpose or self through being bored. Phillips argues that boredom can pose existential questions for a child, writing:

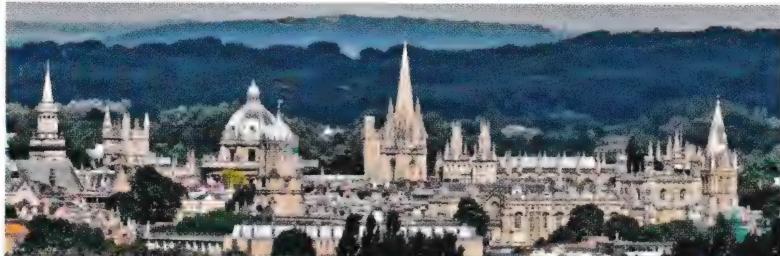
Experiencing a frustrating pause in his usually mobile attention and absorption, the bored child quickly becomes preoccupied by his lack of preoccupation. Not exactly waiting for someone else, he is, as it were, 'waiting for himself. Neither hopeless



It is not in an employer's interest to allow staff to get

nor expectant, neither intent nor resigned, the child is in a dull helplessness of possibility and dismay. In simple terms the child

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always has two concurrent, overlapping projects: the project of self-sufficiency in which use of, and need for, the other is interpreted, by the child, as a concession; and a project of mutuality that owns up to a dependence. In the banal crisis of boredom, the conflict between the two projects is once again renewed.

Phillips argues that the process of being bored and finding an escape from that aversive state can be a developmental achievement for a child. 'In the muffled, sometimes irritable confusion of boredom the child is reaching to a recurrent sense of emptiness out of which his real desire can



Isaac Asimov

Writing in 1964 with what he declared the 'most somber speculation I can make about A.D. 2014,' science fiction author Isaac Asimov predicted that 'mankind will suffer badly from the disease of boredom, a disease spreading more widely each year and growing in intensity. This will have serious mental, emotional and sociological consequences, and I dare say that psychiatry will be far and away the most important medical specialty in 2014. The lucky few who can be involved in creative work of any sort will be the true elite of mankind, for they alone will do more than serve a machine.'

crystallize.' The usual reaction of parents to bored children – rushing around to try to find them a way to occupy their mind – is misguided:

How often, in fact, the child's boredom is met by that most perplexing form of disapproval, the adult's wish to distract him – as though the adults have decided that the child's life must be, or be seen to be, endlessly interesting. It is one of the most oppressive demands of adults that the child should be interested, rather than take time to find what interests him. Boredom is integral to the process of taking one's time.'

Mindfulness in tackling boredom

Though boredom is a relatively vague state to be in, some people find they struggle with chronic episodes of it, with nothing to take their minds away from the agitation it causes. Could mindfulness techniques help to tackle this? Professor Willem Kuyken from Oxford Mindfulness Centre told me that mindfulness involves attending to all experience with intentionality and qualities of equanimity, patience and kindness. He added: 'What is so interesting is that once attention is trained to some extent it is possible to bring awareness to all-positive, negative and neutral experiences, including boredom. There can be rich learning in this process of recognition ("ah, there is boredom"), noting any automatic reactions to boredom (like agitation, sleepiness and so on).'

Kuyken suggested that a mindfulness teacher might invite a person to allow boredom to be there and turn towards it, rather than away. With curiosity,

equanimity, patience and kindness all sorts of learning can unfold. He concluded: 'For example, I don't often experience boredom, but when I do I can note that it has a tendency to be linked very quickly to agitation, which is manifest powerfully in the body as a sort of turning away and motivation to distract myself. If I can recognise it, allow it to be, give it

some time, inevitably the state shifts and changes. Boredom becomes interesting!'

Out of the chasm

At the beginning of this article, I pondered whether boredom is a luxury in the age of smartphones, social media and readily available leisure opportunities. Yet John Eastwood has been wondering whether we have actually become *more* prone to boredom through being exposed to so many potential distractions. 'I think boredom is such an aversive state that we want to banish it as quickly as possible,' he said. 'We turn to quick and easy ways to banish it, we play a video game or turn the music up or go to a movie. All these things are effective in the short term, we become engaged and we're no longer bored. But when that movie ends or the music stops, there's an even greater chasm of boredom. It's like a drug, an addiction, we need more and more intense stimulation to stave off boredom. I'm wondering whether these short-term solutions are making us more prone to boredom... If we view ourselves as vessels just searching for our next "hit" of the drug of distraction we don't learn who we are or how to connect. Learning to be OK with a lack of stimulation is an important life skill: when we are quiet and by ourselves it gives us chance to get in touch with our feelings and needs, and this experience can arm us with the information we need to go out and connect with the world.'

So, has 14 years of research affected Eastwood's own relationship with boredom? 'It's making me more careful about how I fill my time!' What about his family? 'I have two children, 8 and 10, and my 10-year-old understands a bit about what I do. He knows I study boredom and now when he's bored he'll lie on the floor and he says, with this look, "I'm so bored!" It's as if he's saying "What are you going to do about it Mr Boredom Researcher?!"'

And what does Sandi Mann conclude about boredom? 'Too much boredom is not good for us... it produces a lot of negative outcomes, such as lack of concentration, accidents, risk taking, or even thrill seeking. It is certainly not in an employer's interest to allow staff to get too bored! But it has positive benefits for sure.'

So there is some hope for the boredom-prone among us. At least we can use this time to enhance our creativity, to discover what makes us tick, even to find meaning in our lives.

I **Ella Rhodes** is staff journalist for *The Psychologist*
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What has neuroscience ever done for us?

Jonathan Roiser (winner of the Society's Spearman Medal 2013) considers the case of mental health

Over the past 25 years the pace of progress in neuroscience research has been extraordinary, with advances in both understanding and technology. We might expect that this would stimulate improved understanding and treatment of mental health problems, yet in general this has not been the case. In fact, our standard treatment approaches have barely changed in decades, and still fail many people suffering from mental distress.

Why is there this disconnect between knowledge and application? And could we be on the brink of an exciting new era of cooperation between the two disciplines, increasing the effectiveness of existing treatments and even suggesting new ones?

Why do different people with the same symptoms respond to different treatments?

Why should clinical psychologists care about understanding symptoms at the level of the brain?

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Cuijpers, P., Karyotaki, E., Weitz, E. et al. (2014). The effects of

Mental health problems exert an enormous social and economic burden. By way of example, the cost of depression alone to the British economy is over £9 billion annually (Thomas & Morris, 2003), and more than twice as many people die from suicide each year in the UK than are killed on its roads (Office for National Statistics). These stark figures are surprising given that depression is treatable, with strong evidence supporting both pharmacological and psychological interventions.

Why have these social and economic costs remained so high even as treatments have improved? Access to treatment, in particular psychological therapy, has increased in recent years (Layard & Clark, 2014), but of course could be better. And while the stigma associated with mental health problems is greatly reduced from what it was a generation ago (Office for National Statistics), we are still far from the point where public perceptions of mental health problems equate to those of physical conditions. However, these are not the only important factors. As mental health practitioners are well aware, even when a person comes forward for treatment, selecting the right treatment pathway is a huge challenge.

The impressive statistical evidence base from treatment trials masks great variability: different treatments work for different people (and while this article focuses on depression, the same holds for all mental health problems). For example, a large community-based study of medication for depression revealed quite

disheartening results. Only around one third of those in the study recovered fully on the first antidepressant prescribed (Trivedi et al., 2006). For psychological treatments the picture is only a little better: Cuijpers and colleagues (2014) found that less than half recovered fully across a variety of commonly used psychotherapies (with evidence-based treatments such as cognitive behavioural therapy performing best).

In other words, while our standard treatments work well for some, they fail many, resulting in people suffering for longer than they should. There are currently no methods available in standard mental health practice that can predict, even with modest accuracy, which treatment is going to work for which individual. And the many people for whom treatments fail serve as a reminder that developing better interventions remains a priority.

The difficulty in applying neuroscience research

The past quarter of a century has witnessed numerous advances in neuroscience, such as neuroimaging and non-invasive electrical brain stimulation in humans, and optogenetics in animals (the highly selective activation of neurons using laser light, see Fenn et al., 2011). If we believe that 'minds are what brains do' (Minsky, 1988), we might expect this to lead to improved treatment of mental health problems. Yet arguably, the only appreciable impact of neuroscience research on routine mental health practice has been in the use of animal models to develop new drugs, which has yielded few new treatments in this field over the past decade.

This disconnect between modern neuroscience research and mental health practice partly reflects the unresolved 'hard' problem of consciousness: How does the brain generate experience? Mapping between activity in neurons or circuits and subjective experience remains

psychotherapies for major depression in adults on remission, recovery and improvement: A meta-analysis. *Journal of Affective Disorders*, 159, 118–126.

Drevets, W.C., Price, J.L., Simpson, J.R., Jr. et al. (1997). Subgenual prefrontal cortex abnormalities in mood disorders. *Nature*, 386(6627), 824–827.

Fenn, L., Yizhar, O. & Deisseroth, K.

(2011). The development and application of optogenetics. *Annual Review of Neuroscience*, 34, 389–412.

Gaynes, B.N., Lloyd, S.W., Lux, L. et al. (2014). Repetitive transcranial magnetic stimulation for treatment-resistant depression: A systematic review and meta-analysis. *Journal of Clinical Psychiatry*, 75(5), 477–489.

Groenewold, N.A., Opmeer, E.M., de Jonge, P. et al. (2013). Emotional

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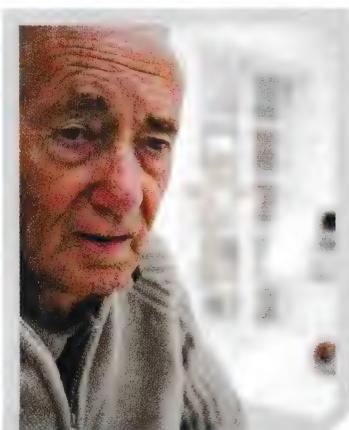
Layard, R. & Clark, D.M. (2014). Thrive.

a huge conceptual, indeed philosophical, challenge. Good science (including clinical science) requires reliable measurement, and neuroscience deals with what can be measured objectively at the level of the brain. In animals, neuroscience measurements and manipulations can be causally related to behaviour, but experience can only be inferred indirectly; human studies have attempted to link brain function to subjective experience measured using self-report, but for ethical reasons these studies are largely correlational. More broadly, we lack a generally accepted neuroscientific explanation of how brains make minds (though there have been some attempts, e.g. Craig, 2009).

By contrast, clinical characterisations of mental health problems, whether conceptualised as categorical disorders or lying on a spectrum, are based on symptoms that in many cases only exist subjectively. In other words, mental health practice takes subjective experience as its starting point – there is no objective test for low mood, worry or hallucination. Whether one adopts a categorical or spectrum view, mental health practitioners rely on descriptive definitions, in which the symptoms specify the spectrum or diagnosis.

Why can't we diagnose disorders using brain scans?

Mapping symptomatically and categorically defined mental disorders onto brain circuits is arguably a hopeless task. To start with, consider the clinical heterogeneity. Two individuals diagnosed with depression could have completely



In mental health practice the symptoms are the diagnosis

different symptoms: one experiencing low mood, poor appetite, difficulty sleeping, worthlessness and suicidal thoughts; the other anhedonia, excessive sleep, fatigue, psychomotor retardation and difficulty making decisions. There is no obvious reason why these very different clinical presentations should correspond to a unitary underlying causal mechanism (meaning here simply the processes that give rise to symptoms, regardless of whether at the psychological or neuroscientific level).

However, a more fundamental challenge is that the even the same symptoms could be caused by completely different mechanisms. Take the simplistic example of a cough. Using a descriptive approach one could define a 'cough syndrome' – cough (cardinal symptom), might commonly co-occur with runny nose, sore throat, fatigue, etc. A cough

has many potential causes: viral or bacterial infection in the lung; asthma; or even cancer. But these are conditions that are defined mechanistically, not according to symptoms. Most importantly they require radically different treatments: antibiotics for bacterial infections; steroids for asthma; chemotherapy, radiotherapy or even surgery for lung cancer.

Although the mechanisms driving depressive symptoms will be far more complex than those of a cough, this example serves to highlight the inherent limits of a purely symptom-based diagnostic system, especially when considering treatment selection. It also suggests that the notion that there might

be a single mechanism for a descriptive diagnosis like depression is probably wishful thinking. For this reason, we will never be able to diagnose 'depression' with a brain scan; because symptom-based categories probably conflate clusters of individuals in whom diverse brain processes drive symptoms. Moreover, neuroscientific explanations deal with continuous measurements, and therefore naturally align better with spectrum approaches than with categorical biomedical models. This is part of the logic that has motivated the American National Institute of Mental Health to move away from funding studies based on descriptive categorical diagnoses.

The argument here is not that mental health practitioners should simply ignore symptoms altogether. Symptoms will always be the first pointers towards mechanisms – just as they are in other clinical disciplines. Someone who visits their GP with a cough is not immediately subjected to an invasive procedure. But if the cough persisted for several months then a doctor might use a diagnostic test to help figure out its cause, before recommending a treatment. In mental health practice the symptoms are the diagnosis (or spectrum), by definition. There are no standard diagnostic procedures to aid GPs in deciding, for example, whether a depressed individual might be best treated by drugs targeting the serotonin or noradrenaline systems, or psychological interventions targeting cognitive schemata or avoidance of reinforcing activities, or some combination of these. And while an experienced psychologist might be able to tailor an intervention such as CBT according to her assessment of the factors that triggered and maintain symptoms, trial-and-error in treatment selection is common.

What do we mean by a 'cause'?

I propose that in order to improve our understanding and treatment of mental

London: Allen Lane.

Lozano, A.M., Mayberg, H.S., Giacobbe, P. et al. [2008]. Subcallosal cingulate gyrus deep brain stimulation for treatment-resistant depression. *Biological Psychiatry*, 64(6), 461–467.

Mayberg, H.S., Liotti, M., Brannan, S.K. et al. [1999]. Reciprocal limbic–cortical function and negative mood: Converging PET findings in depression and normal sadness.

American Journal of Psychiatry, 156(5), 675–682.

Minsky, M. [1988]. *The society of mind*. New York: Simon and Schuster.

Roiser, J.P., Elliott, R. & Sahakian, B.J. [2012]. Cognitive mechanisms of treatment in depression. *Neuropsychopharmacology*, 37(1), 117–136.

Ruhe, H.G., Mason, N.S. & Schene, A.H. [2007]. Mood is indirectly related to serotonin, norepinephrine and dopamine levels in humans. *Molecular Psychiatry*, 12(4), 331–359.

Sroufe, L.A. & Rutter, M. [1984]. The domain of developmental psychopathology. *Child Development*, 55, 17–29.

Thomas, C.M. & Morris, S. [2003]. Cost of depression among adults in England in 2000. *British Journal of Psychiatry*, 183, 514–519.

Trivedi, M.H., Rush, A.J., Wisniewski, S.R. et al. [2006]. Evaluation of outcomes with citalopram for depression using measurement-based care in STAR*D: Implications for clinical practice. *American Journal of Psychiatry*, 163(1), 28–40.

health problems we need to specify the causes of symptoms at the level of the organ that generates them: the brain. It might be claimed that such an approach is too reductionist, ignoring the complex psychosocial context in which symptoms develop. In the standard biopsychosocial model, brain-based explanations of mental health problems are usually grouped together with other 'biological' factors, such as genetic or hormonal, and as a counterpoint to 'psychosocial' causes, such as interpersonal stress or early life experience. But this is a strange division. Of course brain function is influenced by genetics; but it is also profoundly influenced by the environment, particularly the social environment. To put it another way, brain-based explanations of symptoms are neither 'biological' nor 'psychosocial', but instead must incorporate both.

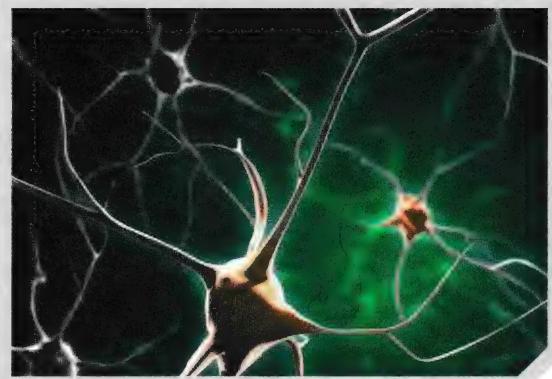
If one accepts the philosophical position that all subjective experience arises from activity in brain circuits then the brain becomes an obvious place to search for the mechanisms driving symptoms, from uncontrollable elation to outright despair. Indeed, it could be argued that integrating psychological and neuroscientific information is the only way in which a truly holistic explanation of mental health problems can be proposed, as the brain is the interface at which genetic and environmental influences interact to produce thoughts, perceptions, beliefs and feelings. And there is no reason to assume that a brain mechanism can only be targeted using a 'biological' treatment – psychosocial interventions change the brain too. Importantly, this is not to privilege neuroscientific models over psychological models of symptoms. Each discipline has much to learn from the other, since they address the same questions but in a complementary fashion, at different levels of explanation. Ultimately they require integration: 'mindless' neuroscience and 'brainless' psychology are both incomplete explanatory frameworks.

A useful notion is to consider different types of causes of symptoms lying on a spectrum, the extremes of which I will term 'proximal' and 'distal'. Proximal causes are directly related to the mechanisms driving symptoms, and are useful targets for treatment; they are often identified through basic science research. For example, lung cancer is (proximally) caused by malfunction in the machinery that regulates cell division. Traditional lung cancer treatments tackle this cause by removing the malfunctioning cells (surgery) or killing them (standard chemotherapy and radiotherapy).

However, 'cancer' is not really a single entity but instead a cluster of illnesses, and modern advances in cancer biology have yielded more precise (and consequently more useful) proximal causes, pinning down the exact genetic mutations that drive different sorts of tumours. Such findings have raised the prospect of an era of 'personalised medicine' in oncology, as targeted drugs are developed for specific mechanisms (Herceptin being a well-known example). For tumours driven by the relevant genetic mechanism, treatment with these drugs can be highly effective. However, they are ineffective (even detrimental) for other types.

By contrast, distal causes are indirectly related to the mechanisms driving symptoms, and are useful targets for prevention; they are often identified through epidemiology research. Again, take the example of lung cancer, which is (distally) caused by cigarette smoking in the majority of cases, though it must be caused by other factors in people who have never smoked. These could be genetic (lung cancer is heritable), other types of environmental trigger (e.g. radon gas exposure) or some interaction between the two. Given the overwhelming evidence that lung cancer is (distally) caused by smoking, efforts at prevention rightly focus on reducing its incidence. However, after a tumour has developed an oncologist must focus on the proximal cause when proposing a course of treatment. Of course, there is often some relationship between proximal and distal causes – smokers do tend to develop similar tumours. However, two patients could have cancers with very similar proximal causes, requiring the same treatment, even if one is a regular smoker and the other has never smoked.

In mental health practice, this brings to mind the (now largely historical) distinction between 'reactive' versus 'endogenous' depression; originally thought to be distinct sub-types of illness driven by distinct environmental and genetic (distal) causes, and suited to different interventions. In fact, this classification was unreliable and prediction of response to treatment was never shown to be consistent. In other words, similar distal causes do not necessarily imply similar proximal causes, as has long been recognised in developmental psychopathology where close parallels can be drawn with the



Serotonin does not usually directly induce activity in neurons

concepts of equifinality and multifinality (Sroufe & Rutter, 1984). As in oncology, the hope is that better specification of the proximal causes of mental health problems will result in better treatment.

Causes of depression

The majority of studies of depression have focused on distal causes (which psychologists might consider 'underlying'). These include: heritability and genetics; hormonal and immune factors; upbringing and early life experience; and personality. More proximal causes include: various forms of stress, particularly social; high-level psychological constructs derived from cognitive theories (e.g. dysfunctional negative schemata); low-level constructs such as negative information processing biases (also important in anxiety); and disrupted transmission in neurotransmitter systems such as serotonin.

However, none of these factors is specified at the level of activity in brain circuits. Dysfunctional negative schemata are internal representations of the environment that are proposed to trigger and sustain symptoms – but schemata must themselves be encoded in the brain. The hypothesis of disrupted serotonin transmission is derived from the effects of antidepressant drugs – but serotonin does not usually directly induce activity in neurons; instead it modulates ongoing activity. The proposal that low levels of this 'happy hormone' somehow directly induce depressive symptoms is not well supported by available evidence (Ruhe et al., 2007), and leaves a large conceptual gap in the serotonin hypothesis.

What of attempts to specify depression at the level of brain circuits? In the 1990s seminal studies demonstrated that regional brain metabolism and blood flow (proxies for activity) were altered in depressed individuals. These identified consistent differences between depressed and never-

depressed individuals in brain structure and function in specific parts of the prefrontal cortex. For example, depressed individuals had hyperactivity in the subgenual anterior cingulate cortex (sgACC; Drevets et al., 1997), which normalised following recovery (Mayberg et al., 1999). Mayberg also showed that inducing sad mood in non-depressed people had the opposite effect of recovery from depression, increasing sgACC activity. Subsequent work using functional magnetic resonance imaging (fMRI) demonstrated convincingly that the sgACC forms part of a circuit that supports the brain's processing of basic emotional information, suggesting a potential role in generating negative biases. Dozens of further studies have confirmed robust abnormalities in this circuit in depression, especially during emotional processing (Groenewold et al., 2013). Taken together, these studies support the notion that negative affective perception and experience in depressed people are caused (proximally) by disrupted function in the brain circuits that support normal emotional processing.

Interesting, but useful?

The information provided by neuroscience may be interesting, but is it useful? It is up to neuroscientists to convince mental health practitioners that their discoveries can make a difference to intervention, and explain what form such application might take. Despite the conceptual problems in mapping symptoms onto brain circuits, such efforts have already provided some surprising progress in the treatment of depression.

One conclusion that can be drawn from neuroscience studies is to confirm that 'depression' is indeed mechanistically heterogeneous, and not a single entity at the level of the brain. Despite the statistical evidence for group differences, even the most robust brain-imaging abnormality in depression (reduced sgACC volume) cannot differentiate between depressed and never-depressed individuals reliably. If one were to calculate a 'normal range' of sgACC volumes in a non-depressed population, the majority of depressed individuals would lie within it.

But might we be able to exploit this variability in brain structure and function among individuals with the same diagnosis, in order to improve treatment selection? A series of studies using similar designs (reviewed in Roiser et al., 2012) has yielded some intriguing preliminary results. These scanned the brains of

depressed people before a course of treatment, while they performed simple emotion processing tasks. Importantly, different treatments were used in different studies: specific medications in some, and CBT or behavioural activation therapy in others. These treatments were then administered over several weeks, and a final assessment of symptom change was taken (using standard interviews such as the Hamilton Rating Scale for Depression), which was related to baseline brain activation.

Consistent findings were observed across studies, but in different directions for psychological and pharmacological treatments (Roiser et al., 2012). Psychological treatments worked best in individuals with relatively normal baseline sgACC activation during negative emotional processing. By contrast, pharmacological treatments worked best in individuals with abnormal baseline sgACC activation. Importantly, this was independent of baseline severity.

Identifying the regions that operate abnormally in depressed individuals has also led to the development of new approaches that intervene directly at the level of brain circuits, both invasive and non-invasive. Deep brain stimulation (DBS) is a surgical technique that involves applying continuous electrical stimulation directly to a localised brain region through an implanted electrode, like a pacemaker for the brain. Importantly, and unlike earlier psychosurgical approaches, DBS does not involve destruction of brain tissue, and the stimulator can be removed if it is ineffective. Initially developed to treat Parkinson's disease, it was first attempted in depression about a decade ago, targeting the sgACC. An open-label trial of DBS in chronically depressed individuals produced encouraging results, with approximately 50 per cent categorised as responders to treatment after 12 months (Lozano et al., 2008). However, these impressive preliminary results need to be replicated in randomised controlled trials. Similar trials have shown that DBS to other brain regions can also treat chronic obsessive-compulsive symptoms.

Clearly, surgical interventions will only ever be used in the most extreme cases. However, non-invasive methods of direct brain stimulation have also been developed, in particular using repetitive transcranial magnetic stimulation (rTMS) to target the dorsolateral part of the prefrontal cortex (DLPFC), which is extensively connected with the sgACC. rTMS is completely different to electroconvulsive therapy – it is

anatomically specific and delivered at much lower intensity (with only a tiny risk of seizure). Several high-quality trials have provided convincing evidence that depressive symptoms can be reduced through daily DLPFC rTMS (Gaynes et al., 2014). In America this technique has already received Federal Drug Administration approval as a potential treatment option in depressed individuals who have not responded to medication.

Neuroscience findings might also stimulate new avenues of research to develop innovative psychological treatments. A classic example was the development of exposure therapy to treat phobias, based on the principles of extinction derived from behavioural neuroscience. More recently, it has been proposed that using visuo-spatial distraction to prevent the initial consolidation of memories in the aftermath of traumatic exposure could act as a 'cognitive vaccine', stopping the development of flashbacks in the first place (Holmes et al., 2010). Finally, cognitive bias modification has been developed with the aim of targeting low-level negative emotion processing directly, but this requires more investigation with high-quality trials (Cristea et al., 2015).

A new era?

At first glance the question posed in my title, echoing the famous scene in Monty Python's *The Life of Brian*, may have provoked a similar sentiment to that of the character Reg, who cannot acknowledge that the Romans have delivered any civic improvements at all. Although modern neuroscience research has, as yet, had minimal impact on mental health practice, we are on the brink of an exciting period.

In the short term the most important effect will be to encourage us to change the way we think about symptoms, focusing on proximal causes at the level of the brain and how these relate to psychological processes. Longer term, the hope is that by recognising mechanistic heterogeneity we will develop better classification systems, new approaches to intervention, and further tools to enable practitioners to choose the right treatment for the right individual.



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Seeing through the double blind

A randomised controlled trial is quality research, right? Not necessarily – Lewis Killin and Sergio Della Sala explain.

Randomised controlled trials (RCTs) are an inescapable means of figuring out whether an intervention is efficacious or not. The main tenet behind RCTs is that they should be double-blind, meaning that neither the participants nor the experimenters know who is assuming the real compound and who the placebo. This is certainly the case for drugs supposed to alleviate the symptoms of dementia. These drugs stand on years of development, research, phases of trials, assessment and analysis. The final phase of this research is based on the outcome of cognitive tests. If a treatment proves effective, it finds a place on the shelves. But how can even the 'gold standard' of research become tainted, and what role does psychology have to play?

How can we better identify and control for authors' vested interests in research?

When and how should RCTs be applied to psychological interventions?

Is replication the best remedy for bias in psychological studies?

Lundh, A., Sismondo, S., Lexchin, J. et al. (2012). Industry sponsorship and research outcome. *Cochrane Database Systematic Review*, 12. AllTrials: www.alltrials.net

In 2012 research 'revealed' that drinking chocolate could be added to the list of treatments for dementia. Chocolate is a good source of flavonoids, naturally occurring compounds that have been associated with a staggering list of health benefits. Desideri and colleagues investigated the effect of flavanol – as administered through 'dairy-based cocoa drinks' – on cognitive function in patients at risk of dementia. A double-blind RCT was used. The result was a positive, dose-dependent effect of flavanols on some measures of executive function, all of which was packaged to represent positive changes in cognition.

The popular press were naturally keen to report the excellent news: 'Chocolate can halt dementia' was the *Daily Express* headline of 14 August 2012 (tinyurl.com/nq62j64). It was especially welcome news for Mars Inc., who funded the study and provided the dairy-based cocoa drinks. By capturing a beneficial effect of its product, this company could capitalise on the dementia epidemic.

At the other end of the lifespan, Brain Gym is a controversial, exercise-based intervention designed to improve academic performance in children (see Ritchie et al., 2012, for more). On their website, there is a section headed 'Why isn't there more quantitative research?', which states that they do not use randomised controlled trials (RCTs) to check the programme's efficacy because

"Industry-funded studies are more likely to report positive outcomes"

'most of our instructors are teachers who use [it] in the classroom, they're working to make a difference for all children, and they question the ethics of not offering equal opportunities to all participants.'

Yet for most psychologists, RCTs are the very epitome of quality research. Should we not be concerned that studies funded by the same industry that creates the product under assessment are perhaps more likely to report positive and larger effect outcomes in its favour than studies carried without such funding?

The ubiquitous bad penny

This potential funding bias might not be a major cause for concern in the case of drinking chocolate. But what about a case where there might be serious implications for treatment or economic consequences for the health service?

We have discovered indications of such potential bias in results for studies assessing donepezil,

routinely prescribed as treatment for Alzheimer's disease (AD). Here, industry-funded, double-blind RCTs that reported the effect of donepezil on

cognitive measures revealed, on average, a larger effect of the drug than the independent studies did (Killin et al., 2014). This difference remained after controlling for different study lengths.

Our finding is not a one-off. The bias of funding is the ubiquitous bad penny of pharmaceutical trials and intervention studies, and has been for some time. A 2003 review commented that an estimated 23–28 per cent of biomedical researchers were thought to receive funding from the industry, and 34 per cent of studies published in 1993 in major medical journals had such researchers as lead authors (Bekelman et al., 2003). The consequence of this is apparent: Lundh et al. (2012) reported that clinical trials funded by pharmaceutical companies were more likely to reveal a positive outcome for

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Cataldo, J.K., Bero, L.A. & Malone, R.E. (2010a). 'A delicate diplomatic

situation': Tobacco industry efforts to gain control of the Framingham Study. *Journal of Clinical Epidemiology*, 63(8), 841–853.

Cataldo, J.K., Prochaska, J.J. & Glantz, S.A. (2010b). Cigarette smoking is a risk factor for Alzheimer's disease. *Journal of Alzheimer's Disease*, 19(2), 465–480.

Chacko, A., Bedard, A.C., Marks, D.J. et al. (2014). A randomized clinical trial

of Cogmed working memory training in school-age children with ADHD: A replication in a diverse sample using a control condition. *Journal of Child Psychology and Psychiatry*, 55(3), 247–255.

Chacko, A., Feirsen, N., Bedard, A.C. et al. (2013). Cogmed working memory training for youth with ADHD: A closer examination of efficacy utilizing evidence-based criteria.

treatment over placebo than independent trials. In nutritional trials, health effects of non-alcoholic drinks were successfully revealed at a rate of 63 per cent in non-industry intervention studies, which pales in contrast to the 100 per cent success rate purported by industry-funded research (Lesser et al., 2007).

The worst of this bias comes when it is not acknowledged in bodies of evidence like meta-analyses or systematic reviews. When independent and industry-funded studies are amalgamated the combined

tobacco smoke was not a risk factor for AD.

The proof and prevalence of this bias inspires scepticism for any data pushed by a group that could profit from convincing you their product works. This is not restricted to hard health data. Psychological studies consider evidence for a plethora of educational or generic cognitive training interventions, and the chance of funding bias still looms.

A recent case in point is Cogmed, which is a brain-training programme that claims to exploit the plasticity of neural working memory systems to improve learning difficulties associated with attention deficit hyperactivity disorder (ADHD). Recently, it has drawn ire from parents and unimpressed psychologists (see tinyurl.com/p3wja63). These sentiments echoed a lacklustre review that concluded it may, at best, be 'possibly efficacious' given that it was often contrasted with poor or inadequate control groups (Chacko et al., 2013). Further criticism came from evidence of its limited effect on general working memory abilities and failure to improve parent-reported ADHD symptoms (Chacko et al., 2014; Chacko et al., 2013). These claims, however, contrast clearly with earlier studies funded by and written by authors with shares in Cogmed (Klingberg, 2012; Klingberg et al., 2005).

Back to Brain Gym: it is worth stressing that the positive data reported may represent vested interests. As laid out plainly by Spaulding et al. (2010), the majority of the evidence detailing Brain Gym's efficacy was published in either the *Brain Gym® Journal* or the *Brain Gym® Magazine*. When assessed formally by means of a systematic review, there was no evidence from peer-reviewed journals to suggest Brain Gym worked, or that these studies had employed sound methods (Hyatt, 2007; Ritchie et al., 2012).

These shortcomings are not specific to Cogmed or Brain Gym, but rather serve as examples of the general attitude towards the brain-training industry. As raised by Owen et al. (2010) and Thompson et al. (2013), brain training produces improvement on the training exercise used in the experiment, but does not result in any statistically significant transfer to other skills.

Cynically, we may not be so surprised. Scientifically, though, we should be puzzled. How does this bias persevere even after studies are put through the wringer of double-blind RCTs? The logic of such trials is that most confounding variables are taken out in the wash, giving clean results. Where does the industry's stream of good news come from?

Publication and design bias

Plainly, this may simply be another flavour of publication bias. Its prevalence in cognitive sciences has been carefully detailed and reviewed by Ioannidis et al. (2014), who noted that, in spite of a near-even split between negative and positive industry-funded trials investigating the effect of antidepressants, the former are suppressed and unpublished (Turner et al., 2008). In the case that these negative findings might be published, however, we would expect these studies to surface in journals well after positive findings (Misakian & Bero, 1998), affecting the rate at which we update our knowledge.

However, this presupposes that all trials are seen through to the end. It may be more cost-effective to call a poor project to a halt if the initial results are shaky. In this way, publication bias may not explain everything, but design bias may.

Fries and Krishnan (2004) observed in their assessment of American College of Rheumatology meeting abstracts that 100 per cent of the total number of abstracts for RCTs of the study's sponsor's drug resulted in a positive outcome. In their discussion, they argue that the ceiling effect seen here could not be



Remember... your good health?

effect is, at best, slightly altered; at worst, entirely misleading. Cataldo et al. (2010b) teased apart the significant risk factor of tobacco on AD reported by independent studies from the null – even protective – effects reported by the tobacco industry's research. The contrasting stories that these data provide meant that 'if one simply combined all 43 studies in a single random effects meta-analysis, one would obtain an inaccurate null result' (Cataldo et al., 2010b, p.475), implying that

Journal of Clinical Child & Adolescent Psychology, 42(6), 769–783.

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attributable to publication bias alone. Instead, they posit that design bias may be the most powerful explanation.

Specifically, as a drug is screened through multiple phases of testing, its weaknesses and strengths are revealed to researchers within the industry. Trials could then be designed to both capitalise on strengths and shade weaknesses. Doing so is a violation of the principle of equipoise, where a drug's efficacy – in comparison to a control – should always be uncertain, and therefore necessitate research. Djulbegovic et al. (2000) revealed that the pharmaceutical industry violates this principle, whereas independent organisations do not. Coupled with the study's finding of the industry's preference to test a product against a placebo or no therapy (as opposed to an active or competing treatment), this suggests that industry studies are designed to be 'safe'.

Variable of interest

Psychologists need to pay particular attention to the scale or test they use to demonstrate efficacy. This is certainly the case in drug trial literature, as multiple scales can be used to assess one aspect of disease; it would be wrong to assume that these are all equivalent. Indeed, this was the case in trials on donepezil; cognition was assessed by both the Mini Mental State Examination (MMSE) and the Alzheimer's Disease Assessment Scale-cognitive subscale (ADAS-cog), yet without any clear rationale behind each choice. On the one hand, each scale has its own strengths and weaknesses; but on the other, they broadly assess the same construct. Does the choice of scale really have a bearing on the outcome?

An analysis of available data suggests that it does. We compared ADAS-Cog and MMSE as outcome measures using standardised mean difference (SMD), which allows one to assess outcome when measured with different tools. After separating trials based on their outcome measure, we see that the ADAS-cog is

associated with a much greater SMD compared to placebo than the SMD associated with the MMSE, meaning that ADAS-cog shows greater effects of the drug than the MMSE. Both scales ostensibly measure cognition, but clearly not to the same effect.

This difference may be explained by the fact the ADAS-cog has been criticised for being too easy (Cressey, 2012). If this is the case, donepezil participants assessed on this scale may always find themselves close to ceiling level despite exhibiting subtle declines that a different scale would reveal. In other words, donepezil groups may still be declining – just not at a rate the ADAS-cog is designed to detect.

Thus, two scales of cognition, often used interchangeably, and considered equipoise in reviews and meta-analyses, do not necessarily present the same effect. It is noticeable that the drinking chocolate study from Desideri et al. (2012) observed a change in speed in executive tasks, but no difference in the MMSE (which, crucially, assesses neither executive function nor speed). The change in the former is still reported as 'cognitive function'. Strictly, this is true, but it is disingenuous to use a broad term that could be misinterpreted so as to apply to a wider range of skills. Ultimately, our broad definitions give ample room for researchers to use and choose tasks that are falsely portrayed as equivalent, yet produce different results. The effect of interventions will vary accordingly. Psychologists should be aware of these potential biases.

Data creativity

In spite of careful planning, there is no guarantee that a trial will work. A failed experiment could be an expensive failure, both in terms of time and money. What is your resolve if a three-year, multicentre trial did not pan out?

If there are enough collected data or possible outcome variables, there is a good opportunity to find or massage

the desired effect in spite of what was declared at the outset. Antidepressant trials reviewed by Turner and colleagues (2008) demonstrated that some industry-funded studies failed to find a statistically significant effect on the primary outcome they had specified in the methods they submitted to the US Food and Drug Administration. Instead, a different result was promoted as the significant primary finding, and the original variable of interest was shelved.

Qualitatively, this has been examined in an unsettling historical case analysis from Cataldo et al. (2010a), which investigated correspondence between the tobacco industry and investigators of the Framingham Heart Study. The introduction of Council for Tobacco Research funding to the study came at the cost of the Framingham data, which would later be reinterpreted and reanalysed to conclude that there was no effect of tobacco smoke on coronary heart disease (CHD). Specifically, an analysis of the data stratified by age and ethnicity would suggest some individuals were naturally predisposed to CHD, diverting attention away from the hypothesis that tobacco was a cause. The latter position was pushed by the original investigators and supported by reference to overall mortality data. In the end, the same data produced two contrasting conclusions.

Ignoring criticism

Positive effects produced by the industry may be due to significant methodological shortcomings in spite of using the RCT method. In these cases, reviewers and critics need to identify these issues. The industry, however, has to listen.

A failure to do so became clear when the health benefits of transcendental meditation (TM) programmes were held under scrutiny. Its use pointed towards possible positive effects on mental health and blood pressure. However, a series of meta-analyses reviewed these claims in turn. Firstly, Canter and Ernst (2003) observed a clear divide between studies

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Tobacco and coronary heart disease... the same data produced two contrasting conclusions

that claimed a beneficial effect of TM on cognition and those that did not. Specifically, TM's success was linked to inadequate control groups (echoing the findings of Chacko et al., 2013 and Djulbegovic et al., 2000). On TM's link with blood pressure, Canter and Ernst (2004) argued that, in a field saturated by TM-affiliated studies, even the most stringent RCT failed to adequately assess baseline measures and also account for differences between experimental groups, such as rates of medication. This was raised as a serious criticism and a source of bias in the TM literature.

After these criticisms were published, Anderson et al. (2008) produced an updated meta-analysis of TM and blood pressure. This naturally contained the criticised studies analysed by Canter and Ernst four years previously. The authors plainly concluded that the quality of TM studies varied. However, given this range of quality their approach was to highlight the high-quality studies, and ignore the fundamental problems raised by Canter and Ernst. The authors nonetheless concluded that TM was responsible for clinically meaningful changes in systolic and diastolic blood pressure. Unlike previous meta-analyses, this was funded by an unlimited gift from Dr Howard Settle (see Acknowledgements in Anderson, 2008), who is responsible for personally funding the construction of TM centres in North America (see tinyurl.com/lck2qfm).

Psychology's role

So, how do we get to the truth of a product's effectiveness? We may be starting on a poor footing. Psychology is fraught with biases and possible confounding effects. For instance, even

well-established phenomena in short-term memory – such as the phonological similarity or word-length effects – are affected by the strategies participants use (Logie et al., 1996). How many other possible variables could explain a part of a human's cognition or behaviour?

What if participants are anxious or if they are not familiar with the words we ask them to remember? At what point do we stop controlling for these variables? We cannot – and do not – address all confounds. Instead, we control for the bigger, broader variables like age, education or gender and work on the assumption that multiple measurements merge and overlap to reveal some identifiable construct or mechanism that can be generalised (Lilienfeld, 2012), and rely on replications (see tinyurl.com/psycho0512) to make sure our finding is not restricted to one place and time (as Manzi, 2010, would argue). The least we can do, in addition, is to control for industry bias, especially if it is something that 'researchers cannot stop' (Seife, 2012, p.63).

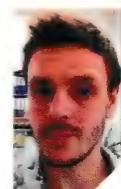
Such control has started to take place in Europe. This year, MEPs voted in favour of the Clinical Trials Regulation, which was created to ensure that trials are pre-registered before they are run, and that the results are clearly reported and explained in lay terms within a year of the study's end. This takes away the likelihood of publication bias, design bias and post-hoc massaging as detailed earlier. Pre-registration may prove an effective tool also in cognitive science (Chambers, 2013; see discussion in *The Psychologist*, July 2013).

However, the scientific community cannot coast along on the new regulation alone. Researchers will still need to be relentlessly critical of industry-funded research. The ammunition closest to hand for a psychologist would be their knowledge of statistics and experimental design, but an education in psychometrics can define the overlap between an affected construct and the test used to assess it, cross-examining the exact claim of industry-funded studies.

Psychologists are also in a position to take on the industry with their own research. This year marks the 50th anniversary of the 1964 Surgeon General's Report on Smoking and Health. To commemorate this event, the role of psychologists in the continued campaign for tobacco control was reviewed recently (DeAngelis, 2014). Amongst other contributions, psychologists were responsible for developing population-wide smoking cessation interventions, such as telephone quitting lines, which are readily available as government-funded amenities across the United States. Furthermore, related psychological interventions have been carefully developed to be sensitive to different populations so as to identify the exact relationships between groups and outcomes associated with their smoking. These efforts stand in contrast to the evidence surrounding nicotine patches, which is a generic treatment with an efficacy affected by industry-funding (Etter et al., 2007).

Conclusions

Funding sources will continue to bias scientific research. The move towards trial registration will take the spin off industry-funded research, but there is still a need for diligence. As this bias perseveres, researchers need to remain critical and forge a way around the bias or, at least, flag it at every instance.



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Dispelling mind myths and debunking pseudoscience

Sergio Della Sala lets Lance Workman into his world

You are both a clinical neurologist and a Professor of Cognitive Neuroscience. I imagine having just one of these roles would be pretty time-consuming.

I am lucky and privileged. I work in a friendly department of psychology, I edit Cortex, a stimulating neuropsychology journal, I travel to interesting conferences in pleasant locations... I find it extraordinary that I could get paid to do things that I like doing and that offer me material to share at cocktail parties. Every morning when I walk to my office I reflect on how fortunate I am. Time-consuming roles which offer you freedom and some pleasures are a luxury compared to what most people have to endure in their working life. Sincerely, it would be provocative if people with a life as jammy as mine would complain.

In addition to your work on neuropsychology you are very much involved in disseminating science to the people. Do you think this has become increasingly important in the 21st century?

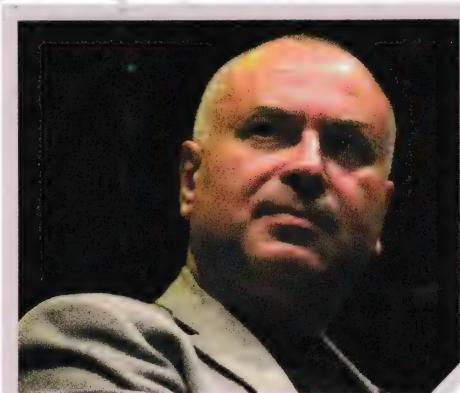
I maintain that one should understand science in order to disseminate it. Too often science is reduced to a matter of opinion, following TV or tabloid formats. Instead basing our choices on evidence and information would increase democracy. More often than desirable it's we, the scientists, who promulgate unnecessary scares, or improbable remedies. We are now all desperate to engage the public. Our institutions push us to branch out and reach out, and we get brownie points if we do so – often independently of what we have to say.

We couldn't even find a decent label for science dissemination. First we called it Public Understanding of Science, creating the disgusting acronym PUS. Then we corrected it into Public Engagement in Science and Technology, allegedly not better as PEST! Science

festivals are springing up in every city. However, the idea that simply discussing science publicly can counter misinformation is naive, and potentially counter-productive.

I must admit the acronym 'PUS' hadn't occurred to me before! I can see there's a fine balance to make between disseminating findings in science and avoiding simplifying things that can be used to make headlines. Can you think of occasions when you have said no to the media?

Too often we have nothing to say (and we say it!). It also happens that the requests are not for an evidence-based view, but 'to give a positive spin on the story'. A journalist recently put it to me,



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that she would not take 'sorry, there is no evidence that that particular flim-flam works' for an answer. She wanted a positive answer, and eventually she extracted it from a colleague.

Sometimes the conditions for a decent discussion on science are simply not met. Recently, 'Sense about Science', an independent organisation which is doing a lot of good to promote scientific thinking,

put me in contact with a journalist who was organising an episode of the *Today* programme for Radio 4. Her request was for me to debate with Baroness Susan Greenfield, who promotes the idea that children exposed to social media or the internet are more likely to develop autism, on the basis that both use of the internet and autism are increasing in parallel. A bit like saying that eating ice creams causes drawings as consumption of ice creams increases in parallel to observed number of people drawing! However, a few hours before going live on air, the journalist called me asking about the evidence I had to demonstrate that the hypothesis was untenable. I failed to argue convincingly that the onus of presenting evidence is on the proponents. She was unabashed by her construction of opinion versus opinion, no evidence on one side, but equally no evidence on the other. Hence, I did not see fit to discuss science when its basic rules are misunderstood, and withdrew. I strongly believe that science programmes should be run by people with at least a minimal knowledge of science methods.

In relation to disseminating science to the public, was this a conscious decision to go in this direction, or did you somehow fall into it?

I enjoy sharing, it's as simple as that. And it is often gratifying and rewarding, even flattering.

You've conducted a lot of research in the field of dementia. What got you interested in this problem initially?

I was working in Italy at the time, and we had little money; neuropsychology was a cheap option to carry out decent research and the neuropsychology group in Milan had reached international reputation. However, at the time all the focus was on hemispheric differences and on the relationship between lesion sites and cognitive or behavioural changes. Using neuropsychology not only to assess dementia but to derive data which could inform models on the cognitive architecture of the mind was a bit revolutionary. Nowadays it's accepted wisdom.

In relation to the dementia research, do you feel we are currently making good progress? Will we ever see a time when we will have this growing problem licked?

Some progress is continuously being made, slowly but steadily. What we know today is more than what we knew yesterday. However, too much clout is left in the hands of private interests... most

research is still carried out by Big Pharma companies. We really need independent research, as much as possible. On a completely different note, we should invest more money to assist families with the burden of patients with serious and, to date, intractable diseases.

We tend to view growing old as an inevitable loss of cognitive ability and, in particular, memory. Are there any areas where we might actually improve in old age?

Well, if we struggle a bit, we could dig out some cognitive effect which favours old age, like the so-called positivity effect, whereby older adults show improved memory for positive images, whereas younger adults often show an opposite bias. This would indicate

that older people are more likely to remember life events positively.

However, I am not buying into the camp that considers good ageing is everything that resembles youth. When Anna Magnani, a famous Italian ageing actress was asked whether she wanted to hide her wrinkles, she replied that she would like them left visible as it took her a full life to make them! On a personal level I feel more like Bill, the character played by Michael Douglas in *Last Vegas* (I know, I know, I should watch better movies...), who says something like, 'My brain cannot conceive how old my body is', hence I insist on playing soccer, though I have to convince my fellow players that I run up or down the pitch rather than up and down the pitch.

When it comes to the brain it is often said that use it or you'll lose it. Do you think the latest computer programs that have been developed to help this really work?

We like metaphors and abhor complexity – hence often discussions about the functioning of the mind are reduced to slogans or simplistic concepts. Of course we should keep our mind alert and busy, especially when growing old. However, playing computer games or buying into improbable miraculous programmes won't do us any better than seeing friends, enjoying a walk or doing crosswords.

I've often read that idea that we only use 10 per cent of our brains. Where did that come from?

If that were my case I'd be really worried. It probably comes from the misunderstanding of terms like 'potential'. A sentence saying that we use 10 per cent

of our potential may be unscientific but still acceptable in the magazines that we find at the hairdressers. We love to think that there are magic silver bullets fixing all. However if something looks too good to be true, as a rule it is too good to be true! So we come to believe that listening to Mozart (but not the Sex Pistols) can boost intelligence or that gulping down fish oil pills can boost our brain power.

You are famous for debunking 'mind myths' – in fact you have compiled a book of this name. What would you say is the most outrageous mind myth that is still widely believed?

Claims relating to the brain have a unique mystique, which seems to bypass critical thinking, leaving us especially gullible. I am not sure though that we can compile a ranking of the various myths about the functioning of the mind. I would maintain that they are outrageous when people get economic advantages by proposing remedies or programmes based on pseudoscience, particularly in schools or hospitals.

"too much clout is left in the hands of private interests"

There are a lot of books around that suggest people can draw on the right hemisphere to improve their level of creativity. You're critical of this simplistic view?

According to this logic, a poet who uses language, hence a left hemisphere skill, is not creative. It is certainly true that some cognitive functions are expressed via the activations of areas sitting in one or the other brain half. There is, though, no evidence to support the idea that programmes teaching us to use the right hemisphere to become more creative have any grounding in reality. Show us the evidence please, rather than selling improbable enhancing programmes in teacher's gatherings like in a Casablanca souk. We love dichotomies, we believe we understand them, so we tend to subdivide everything into them. It's a dichotomia – left and right, yin and yang. I say that if there are no sound empirical data supporting these dichotomies, then these practices should not be given a go in the classroom. For instance, the idea that different children learn information in different ways, and can be classed as verbalisers or visualisers, has been greatly hyped in our schools. The concept of learning styles may be intuitively attractive, but evidence supporting it is scant.

You have uncovered evidence that people have a natural leftward bias for

remembering information. Why do you think this is the case, and what does it tell us about human lateralisation?

These studies capitalise on what we know already about the asymmetry in distributing attention towards the left and the right half of our environment, dramatically demonstrated by the performance of patients with visuospatial neglect following a unilateral brain damage. We have simply added to the arrays of possible asymmetries by demonstrating that even in healthy people asymmetries include imagined scenes, that is scenes (or objects) that we visualise in our head without immediate percept. We labelled this phenomenon 'representational pseudoneglect'.

A recent book (with Mike Anderson) is concerned with Neuroscience in Education. I'm intrigued by the subtitle – 'the good, the bad and the ugly'.

The 'neuro' prefix is very fashionable, and neuroeducation is just one of the myriad offsprings. This has resulted in the development of a number of new practices in the field of education – some good, some bad, and some just crazy. Too often, people with the clout to make decisions about which practice is potentially profitable in the classroom setting, ignore evidence in favour of gut feelings, the authority of 'gurus', or unwarranted convictions. In short, opinions rather than data too often inform implementations in schools. On the other hand, some 'good' classroom developments are centred around mainstream cognitive findings rather than brain anatomy or localisation. For instance, one such finding, named retrieval practice, has been replicated many times. Students stockpile learning just before an exam, they may do well enough on that exam, but if they want to retain the material long-term, then retrieving it via multiple tests is a better bet. However, we always have to remind ourselves that since science is not prescriptive, it's descriptive, then politics, ethics, individual choices, practicalities would guide implementations.

You've achieved a great deal in terms of research and the dissemination of neuroscience. What next?

Thanks for your generous comment, but I am just doing my job. Working wise, my plan is to keep learning as much as I can, until I can, and possibly have some fun in the process. From a private stance, I wish to raise all my daughters so that they could be a bit proud of me now and, particularly, later.

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A baby's view of the protoface

Image and words from Punit Shah, winner of this year's 'Big Picture' competition

Newborn infants demonstrate an extraordinary affinity toward faces. This is believed to be driven by a subcortical primitive mechanism tuned to the 'protoface' stimulus: a face-like configuration of three dark blobs on a white background. This heavily biases input into their visual system, thereby supporting the development of cortical brain circuitry required for face processing, and related social cognitive functions.

This humble yet powerful 'three-dot' stimulus has therefore been the mainstay of investigations into newborns' face perception, pioneered by Professors John Morton and Mark Johnson. It continues to reveal numerous insights about typical and atypical face perception in adulthood, and forms the basis of my research at the MRC Social, Genetic and Developmental Psychiatry (SGDP) Research Centre at the Institute of

Psychiatry, Psychology and Neuroscience.

What remains unclear, however, is whether orienting to the protoface is present right throughout early development and/or whether it declines later in life. Equally, it remains to be seen whether a failure to attend to the protoface leads to conditions such as developmental prosopagnosia ('face-blindness'). Well, I guess I have my work cut out for my PhD then...



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24 - 28 August 2015 with Mark Williams & Chris Cullen



Mark Williams is Emeritus Professor of Clinical Psychology and was Director of the Oxford Mindfulness Centre until his retirement. A Fellow of the British Psychological Society, the Academy of Medical Sciences, the British Academy and the US Association for Psychological Science, Mark co-developed Mindfulness-based Cognitive Therapy for prevention of relapse and recurrence in major depression.



Chris Cullen works as a mindfulness teacher and psychotherapist. He co-founded the Mindfulness in Schools Project, and teaches mindfulness courses for MPs and Peers in the Houses of Parliament. He has a Master's degree from Oxford University in Mindfulness-Based Cognitive Therapy.

This 5-day Summer School offers the chance to deepen the practice of mindfulness and reflect on its place in the world as a source of wisdom and healing.

Through practice, dialogue and discussion, participants will enquire into some of the big issues and questions that surround mindfulness in the 21st century:

- As mindfulness becomes ever more popular, how can it be taught in an accessible way without losing its integrity?
- Scientific studies of mindfulness need to meet the rigour of the best scientific discipline. Only then can mindfulness training take its place as an evidence-based intervention; but what might be lost in the quest for evidence? Originally, mindfulness was a vital part of a path to wisdom and ethical living - is this still the case?
- How much practice is enough practice? Is there a general answer to this question or is it always the beginning of another enquiry?

There are retreats for deepening practice and conferences for learning about science, this Summer School allows important themes to be developed over a whole week under the guidance of two world-renowned experienced teachers. Held in the beautiful city of Oxford, this event is aimed at those with some previous training in mindfulness.

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The power of personality

John D. Mayer argues that 'personal intelligence' shapes our lives

The world offers many rewards to individuals who understand themselves and other people – or so we have been told. Since ancient times philosophers from around the world have spoken of the value of understanding the people we encounter. Many of humanity's earliest written documents – dating back to 2500 BCE – urge us to read people carefully. But the authority of ancient (and more recent) philosophers can take us only so far. Further developments awaited the founding of psychological science and empirical research into accurate person perception and self-knowledge.

The theory of personal intelligence described here draws philosophical and psychological ideas together and opens a new line of research directed at understanding ourselves. This lays the groundwork for a new measure in the area: the Test of Personal Intelligence.

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Dunning, D. (2005). *Self-insight:*

Many moons ago, an unknown sage travelled to the Greek temple at Delphi and inscribed 'Know yourself' on a pillar – an act that initiated a discussion about self-understanding that has continued through today. Plato explored the inscription's meaning in his dialogue *Philebus*. In it, Plato argued that those without self-knowledge often look ridiculous to others and that powerful people without self-understanding often behave rashly and can harm others as a consequence. Many philosophers were inspired by Plato's work and sought to understand themselves and to live rational and good lives.

In the 19th century, educated people read about the lives of philosophers to reflect on their own lives and to find guidance for their personal choices. Recently, James Miller, a political scientist, studied a group of 12 philosophers from Socrates to Nietzsche, focusing on how the philosophers' insights and self-inquiry affected their life choices. In *Examined Lives*, Miller concluded that the philosophers' principles often failed to address their circumstances and that more than a few of them were unable to live according to their own strictures (Miller, 2012). Miller began to doubt the virtues of the examined life by the end of his project, regarding the philosophers' lives with, 'not just awe and admiration, but also pity, chagrin, and, in a few instances, amused disbelief'.

If philosophers didn't always guide their lives well by using classical logic and principles, maybe there's a different kind of reasoning that people use to guide

their lives intelligently. Could there be a form of reasoning that expressly concerns an understanding how our overall minds work: an understanding of personality itself?

I've labelled the capacity to reason about personality 'personal intelligence' (Mayer, 2008, 2014). Because each of us possesses a personality, personal intelligence involves reasoning both about ourselves and about other people.

On the shoulders of giants

Philosophers recognised the value of understanding other people even before they argued for self-knowledge. Two thousand years before Plato, the Egyptian thinker Ptahhotep provided lessons on carefully sizing other people up – including how to read personality traits such as laziness and trustworthiness.

Though Plato, Ptahhotep and other ancient philosophers anticipated the importance of self-knowledge and reading people, they had no experimental methods or mental measures to study how people exercised their skills. When the first psychologists founded the field around 1887 they described their work as investigating mental life. The field's earliest research focused on the basic functions of sensation, perception and memory. At the same time an interdisciplinary group of thinkers formulated theories of the overall mind – and of self-knowledge. Sigmund Freud sought to increase his patients' self-awareness by applying new therapeutic techniques to make their unconscious conscious. A half century later, Carl Rogers encouraged his therapy clients to follow their authentic, true selves. Yet Freud, Rogers and other thinkers were limited by the psychological understandings of their times.

In the several decades leading up to 2007, psychologists advanced the field of personality psychology in several key ways that led to a new and more powerful grasp of what personality is. For much of the 20th century personality

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psychologists were a tribe divided by their different theories: psychologists with allegiance to Freud emphasised the conflicts between our unconscious and conscious mind; behaviourists focused on a person's acts in preference to their inner states; humanistic psychologists emphasised people's possibilities for healthy psychological growth. The divergence of opinion suggested that even experts weren't yet sure about the best ways to read personality.

By 2000 most personality psychologists had put aside such differences and had become actively involved in innovative research that newly informed the field. The *American Psychologist*, after having published next to nothing about personality for the preceding decade, published two articles on the integration of the field in 2005 and 2006 (Mayer, 2005; McAdams & Pals, 2006).

Also by 2007, psychologists expressed a new confidence that personality was worth studying. Psychologists had been engaged in the 'person-situation' debate in the late 20th century. The debate concerned whether personality exerted a meaningful influence over an individual's life or whether most human behaviour was due to the power of situations. That debate had quietened down leading into 2007. In 2009, Fleeson and Nofle declared that: 'Instead of fighting over whether to study personality, or what type of personality to study, effort can be placed into actually studying personality' – as researchers already were doing (Fleeson & Nofle, 2009, p.153).

New findings spelled out how we perceive traits. In the 1980s psychologists attained consensus that everyday traits (represented in the language) could be covered fairly well by five 'big' traits of Neuroticism, Openness, Extraversion, Agreeableness and Conscientiousness. As psychologists enlarged their research activities they created encyclopedic collections of statistical data about the relations among those big five (Goldberg et al., 2006). By 2007 a great deal was known about what those traits predicted (Roberts et al., 2007). Psychologists also synthesised hierarchies of defence mechanisms and explored the influence of defensive distortions on people's lives (Vaillant, 2000). They further examined how people read one another's intentions and the best way to formulate goals (Chulef et al., 2001; Emmons & King, 1988).

From 2000 to 2007, psychologists zeroed in on topics especially relevant to understanding ourselves

and others: David Dunning, Timothy Wilson and Elizabeth Dunn reviewed the past decades' work on self-knowledge; David Funder established the Riverside Accuracy Project to understand more about how we read other people accurately (Dunning, 2005; Funder, 2012; Wilson & Dunn, 2004).

These advances were the foundation that made the theory of personal intelligence possible: before psychologists could identify who was genuinely smart about personality, they needed to better understand the logic by which the personality system operates.

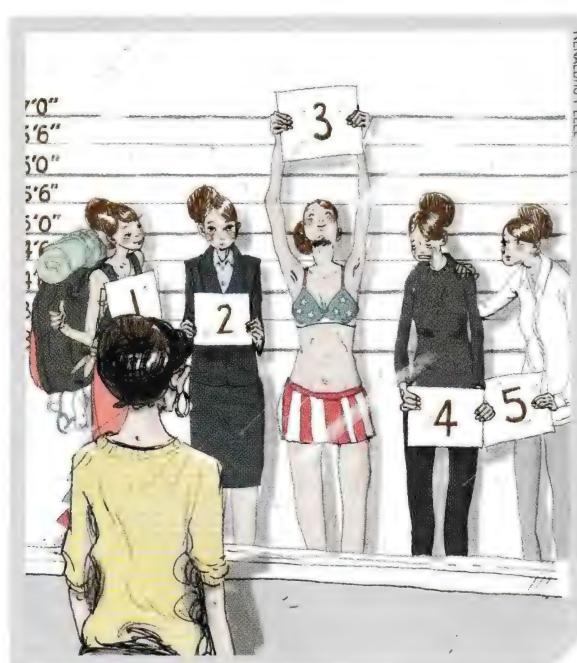
What does personal intelligence look like?

Psychologists agree on a definition of personality as a system that represents an individual's broad psychological functioning. I define personality as the global psychological system that organises a person's motives and emotions, knowledge and intelligence, expression and action, and self-control and awareness.

Intelligence, meanwhile, is a capacity to solve mental problems. In the Cattell-Horn-Carroll model of intelligence – a prevailing contemporary model – there are three levels of human mental abilities. Think of an organisational chart with the company president at the top, division managers at the second level, and individual staff at the third. In the intelligence model, general intelligence is at the top, broad intelligences occupy the second level, and more specific abilities are at the third.

Each broad intelligence reflects a consequential set of problem-solving abilities. Some of the broad intelligences are content-focused, such as verbal and spatial intelligences, and that's where I believe personal intelligence fits in. (Other broad intelligences are function-focused, such as memory capacity and speed of mental processing.)

Our reasoning about personality is woven into our daily activities. We think



Choose carefully now – who would make the best lunch companion?

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about other people, talk about them, make decisions about them, and reflect on ourselves. As we do, we may discuss our thoughts with others, record our thoughts on Facebook, in e-mails or in a diary. In each instance we leave behind a trace of what we understand about personality. Certain public figures whose lives have been chronicled in autobiography or biography – scientists, artists, leaders and celebrities – often do their thinking about people in public, and their reasoning becomes part of the public record.

For example, traces of personal intelligence run through Katherine Graham's memoir of her life and leadership of the *Washington Post* newspaper. Graham took over the paper in the 1970s after the unexpected death of her husband (who was until then the paper's publisher). Graham described her decision to take over in psychological terms. Although she had never run any business, let alone a large newspaper with multiple media holdings, she felt she couldn't desert the paper or sell it. She had watched her father and husband build the paper into an influential news source, and was personally motivated to continue their legacy. I believe her journey was guided in part by her ability to see herself and other people accurately.

Before deciding to take the helm of the newspaper herself, Graham consulted with trusted friends, who encouraged her to take on the challenge. In her new role as publisher she understood that the *Post* staff members would see her in different ways depending upon their own personalities and needs. Many on the staff would view her as a clueless intruder, some would welcome her, and more than a few wouldn't care that she'd taken over. Sometime after she took control of the paper she also revised her view of her deceased husband. She realised that she had idolised his service as publisher, and concluded that she would both need to become more realistic about his talents and to find her own individual path to leadership. She thought in psychological

terms – and with considerable accuracy – about her role as a leader.

Four areas of problem solving

The theory of personal intelligence describes four broad areas in which problem solving about personality occurs. Individuals (1) recognise clues to personality, (2) form models of people, (3) guide choices on that basis, and (4) systematise their goals and plans.

Consider Ben, who went to dinner with his new colleague from work, Aiden. When they met at the restaurant, Ben identified clues to Aiden's personality: he observed Aiden's clothes (a rather expensive raincoat), noticed the scowl that seemed set on Aiden's face; and once they were seated at their table, Ben noticed that Aiden spoke eloquently and seemed to understand what one of their new business clients was looking for with considerable clarity. When Aiden criticised a co-worker, Ben thought it was a bit harsh, but Aiden leavened his comment with the reflection that, 'we all have our limitations'.

Ben next used the clues he had observed to form a tentative model of Aiden's personality – that Aiden was a pretty smart guy (based on his facility with the language) who didn't suffer fools gladly (his scowl, his harsh comments about a colleague), and who coped with his disappointments with philosophical humour.

Ben entered a third phase of problem solving – guiding choices – at the same time. He knew he often liked people such as Aiden, and that they could form a friendly alliance at work if Aiden was like similar people Ben had known in the past.

The final area of personal intelligence – systematising plans and goals – generally takes place over a longer period of time. Ben's beliefs about Aiden, and his interest in him were part of Ben's longer-term goals of making friends and excelling on the job.

We all continually engage in this type of problem solving as we encounter new

individuals and readjust our relationships with those we know. In these instances, personal intelligence serves as a guidance system to our personalities.

A psychometric test of the concept

It's one thing to have a theory of personal intelligence and another to collect evidence of its existence. In 2008 I joined with my colleagues David R. Caruso of Yale University and Abigail T. Panter of the University of North Carolina to test the hypothesis that personal intelligence existed.

We created a measure called the Test of Personal Intelligence (TOPI) to search for evidence concerning the theory. The test consisted of 140 questions divided into the four areas of personal intelligence described above – recognising information, forming models, guiding choices and systematising goals. Within each of the four areas were several distinct clusters of items to measure problem solving in that realm.

One way we form models of personality is to notice a key characteristic of a person, and then to anticipate other qualities that often go along with that feature. We can do that because certain traits tend to co-occur more often than others. To measure people's abilities to form accurate models of people, we asked questions such as:

A person is straightforward and modest. Most likely she also could be described as:

- A. Independent and disagreeable*
- B. Active and full of energy*
- C. Sympathetic to others and 'tender minded'*
- D. Self-conscious and more anxious than average*

The answer to this item is 'C' because research indicates that people who are straightforward and modest are also likely to be more tender-minded and sympathetic to others.

Over a series of three studies, we found evidence that people vary reliably in their abilities to solve a diverse group of problems pertinent to understanding personality. Some test-takers performed well across the diverse tasks, whereas others fared more poorly, indicating that people's performance is due to a broad ability to solve problems in the area – a personal intelligence (Mayer et al., 2012).

The correlations between the Test of Personal Intelligence and other measures also suggested that personal intelligence is a broad intelligence. In our most recent published study, the TOPI correlated

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Sensation seekers are more likely than others to take dangerous physical risks

significantly with a measure of vocabulary (a proxy for verbal intelligence) and with psychological openness, a common correlate of intelligence. We also found that people who are 'psychologically minded' – those who like to access their feelings, discuss problems and figure out others – also tend to be higher in personal intelligence.

What about emotional intelligence?

My colleagues and I view emotional intelligence – the ability to reason accurately about emotion – as an intelligence that is validly measured only by ability measures (Mayer, Roberts et al., 2008; Mayer, Salovey et al., 2008). Other psychologists assess what they call 'EQ', 'mixed models' or 'trait EI' by asking people about their optimism or persistence; we regard that approach as measuring something other than the actual intelligence. The current ability measures of emotional intelligence we use, although imperfect, stand up to considerable scrutiny, with intelligence researchers now arguing that EI could be added to the Cattell-Horn-Carroll intelligence model (MacCann et al., 2014). In my next remarks about personal intelligence and its criterion relations, my reference to tests of emotional intelligence will be limited to the ability model and ability-based measures.

Personal intelligence represents a dramatic broadening of the concept of emotional intelligence. It includes problem solving about motives, traits, goals, and other facets of personality, in addition to thinking accurately about emotions. Few TOPI test items ask anything directly about emotion.

Research in this area is new, but our preliminary findings suggest that high scorers on the Test of Personal Intelligence may experience life advantages specific to having healthier personalities. High scorers on the TOPI lack symptoms of personality disorders,

and are higher in conscientiousness – a trait that is increasingly viewed as a global index of the integrity of personality functioning (Mayer et al., 2012, Study 3; Mayer, 2014).

People good at problem solving about personality in general also exhibit higher than usual emotional intelligence, as reflected by a high, significant correlation between the TOPI and the combined emotional understanding and emotion management branches of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). Whereas the TOPI is related to the big five variable of conscientiousness, however, the MSCEIT's relationship with the variable appears weaker or non-existent (Brackett & Mayer, 2003; Iliescu et al., 2013; Karim & Weisz, 2010).

Is personal intelligence important?

Personal intelligence is important at both the individual and societal levels. At an individual level, it explains the reasoning we use to understand ourselves and other people and helps to mitigate our 'blind spots' – matters we don't know about ourselves and others. Improving our understanding of ourselves and other people is likely to lead to our enhanced well-being and to smoother relationships with others.

We further use our personal intelligence to inform ourselves about our future – by paying particular attention to people with the same characteristics we have. If I seek constant excitement, then I can use my personal intelligence to identify and track down the class of people who are 'sensation-seekers' like me. I'll learn that I'll likely enjoy extreme sports, and that I might enjoy work as a firefighter, emergency medical technician or other first responder. On the downside, as a member of the class of sensation-seeking people, I'll need to manage my risk judiciously. Sensation seekers are more likely than others to take dangerous physical risks and to experiment with and abuse mind-altering drugs.

Turning to the level of society, I believe we need to better acknowledge and respect people who use their personal intelligence well. We benefit not only from the engineers who design our computers, phones and cars, and not only from the farmers who grow our food, but

also from people who understand themselves well and interact with others with respect and understanding. Personal intelligence provides recognition to individuals who excel in this area.

The reverse condition also exists. Some people around us are relatively insensitive to the personalities they interact with. In meetings, individuals who are low in personal intelligence may be prone to make insensitive remarks to other group members who sit around the same table. Before we attribute their behaviour to hostility, we should consider that they may say what they do because they lack a basic understanding of people – regardless of how smart they are in other areas.

Tests of personal intelligence will help us identify individuals who are gifted in this area, and those who could benefit from education about personality. Psychotherapists have been helping people improve their capacity to understand personalities since the beginning of the field. Therapists encourage their clients to attend to their own feelings and reactions to the surrounding world – and to think more accurately about what other people are like. We may be at a point where we can supplement such therapy with classes and manuals about personality that will enable us to educate people about how this problem-solving takes place and to strengthen people's reasoning in the area.

At the outset of this article I described how philosophers valued self-knowledge and yet might not always be good role models in that regard. Part of the trick of getting through life is using the right kind of intelligence for the right job. Schneider and Newman (2014) have pointed out that each broad intelligence, such as verbal or spatial intelligence, makes a different prediction about an individual's future. For example, people with high spatial intelligence are more likely than others to succeed at such careers as engineering and architecture (Wai et al., 2009). In other words, we apply spatial intelligence to the world of two- and three-dimensional objects and verbal intelligence to the world of thoughts and ideas... and, I believe, we employ a personal intelligence to help us understand our mental lives and the personalities around us.



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Calling time on Alzheimer's

Could circadian rhythms be the key? Brianne Kent with the latest in our series for budding writers [see www.bps.org.uk/newvoices for more information]

Walking into a dark, isolated room, with only a dim red lamp to help determine where one cage ends and another begins, I can hear rats scurrying in anticipation of their next mealtime. This was my first experience working in an animal lab. We were studying a process called 'food-entrainment', which looks at how eating at the same time each day can synchronise physiological processes throughout the body, in ways analogous to how daylight affects sleep-wake behaviours.

I saw this work as a way to gain laboratory skills and research experience that would prepare me for postgraduate study of my primary interest – the ageing brain. However, six years later as I am finishing my PhD, I find myself looking back to those very first experiments I did as an undergraduate, and asking whether what we know about food-entrainment in rodents can be translated to help slow the onset of age-related brain disease in humans.

Alzheimer's disease and other dementias are arguably the greatest public health challenge of the 21st century. Although German psychiatrist and neuropathologist Aloisius Alzheimer, first identified Alzheimer's disease over a hundred years ago, we remain without effective treatments or a cure for this devastating disorder. It is imperative that more funding and research go towards understanding the underlying disease processes at every level of analysis: from genetics and molecular processes to

systems and behaviour. We need a cure, and I am confident that we will find one.

However, the demographics in society are changing quickly and every day a larger portion of our population is becoming at risk for age-related diseases. Finding ways to promote overall health is arguably just as important as understanding the specific mechanisms of disease. Age-related diseases, such as Alzheimer's disease, do not develop overnight. Ageing begins at birth and for 60 to 70 years our body's natural defences are able to ward off disease progression. It appears that once we reach a delicately poised boundary, our repair and clearance mechanisms are no longer able to counteract the damage to our cells.

The question is: How can we shift this threshold to postpone when age-related diseases become problematic? Even a relatively small change may delay the onset and spread of these conditions enough to make a big impact on the quality of life of patients and reduce the costs to society. Taking a systems-level approach that considers synchronising circadian rhythms may hold potential for identifying inexpensive and effective interventions for age-related diseases, such as Alzheimer's disease (Kent, 2014).

Alzheimer's disease pathology is most commonly associated with profound amnesia, but the disease does not affect

cognitive processes in isolation. There are widespread effects throughout the body, affecting appetite, sleep patterns, emotional regulation and sense of smell. Some evidence suggests that non-cognitive symptoms, such as involuntary weight loss and sleep disturbances, may even occur prior to the memory and executive functioning deficits (reviewed by Sergi et al., 2013, and Landry & Liu-Ambrose, 2014).

Sleep irregularities and restlessness in the evening, referred to as 'sundowning', are distressing clinical symptoms suggestive of disruptions in an internal timekeeping mechanism. Circadian rhythms are biological processes that impose a temporal architecture on physiology and behaviour. These rhythms coordinate our internal processes, with daily cycles in the environment. In humans, the suprachiasmatic nucleus (SCN) in the hypothalamus region of



the brain is considered the central timekeeper of these rhythms. The SCN is directly entrained (i.e. synchronised) by daylight and regulates the timing of other internal rhythms, which is why it is often referred to as the 'master pacemaker'.

When the body's internally generated rhythms are not synchronised with external daily cycles (such as when suffering from jet-lag or working a nightshift), sleep disturbances, fatigue and cognitive deficits are common and illustrate the strong influence SCN timekeeping has on the body. These symptoms are also experienced by the elderly and Alzheimer's patients because of sporadic sleeping patterns. The loss of normal circadian behaviour is associated

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Maywood, E.S., Fraenkel, E., McAllister

with increased morbidity and mortality in both humans and animal models (Froy, 2011), emphasising the importance of maintaining rhythmicity.

Sleep disturbances in Alzheimer's disease have a negative impact on daytime functioning of the patient, as well as the well-being of the caregivers, and are a major contributing factor for placement of Alzheimer's patients in residential care homes (Bianchetti et al., 1995). Light therapy is often used to improve quality of sleep for Alzheimer's patients, in an attempt to enhance circadian rhythmicity and re-establish synchrony among rhythms throughout the body. This therapy may also provide an alerting effect that can help sustain daytime waking to stimulate activity, raise body temperature and increase eating.

Even though light is considered the dominant environmental stimulus for synchronising circadian rhythms, for many processes the timing of food intake is just as important and can affect rhythms downstream of the SCN (reviewed by Patton & Mistlberger, 2013). Daily feeding can entrain (i.e. synchronise) free-running rhythms by acting directly on the SCN or by acting on the anatomically separate but unidentified 'food-entrainable oscillator' to synchronise rhythms even if the SCN is damaged.

Some hypothesise that with age the SCN stops functioning optimally, and this master pacemaker is no longer able to coordinate physiological processes. In this case, food-entrainment could be used to reverse the age-related dampening of rhythms. In a mouse model of Huntington's disease, food-entrainment was successfully used to synchronise rhythms, and restore daily behavioural cycles and metabolic abnormalities (Maywood et al., 2010).

Another possibility is that the SCN keeps ticking along unaffected by age, but that other oscillators throughout the body, governing important physiological processes, become uncoupled from the central rhythm. A recent study using a

Drosophila model of Alzheimer's disease showed progressive circadian deficits analogous to those experienced by patients, but demonstrated that the sporadic sleep-wake behaviours were not due to an arrhythmic internal timekeeping mechanism (Chen et al., 2014). If translatable to humans, it would suggest that the SCN remains intact and functioning in patients with Alzheimer's disease, but that other rhythms become out of sync.

Uncoupled rhythms would mean that physiological processes may be occurring at suboptimal times. For example, sleep-wake behaviours could be misaligned with cycles of body temperature, or hunger may no longer coincide with peak digestive functioning. If the SCN is intact but no longer in sync with other rhythms, it may be possible to use scheduled mealtimes to bring physiological processes back into synchrony.

Studying the mechanisms underlying food-entrainment could also lead to pharmacological discoveries that mimic the effects of food on our circadian system. For example, ghrelin or another feeding-related neuropeptide, may be a putative candidate for a food-related entraining signal. Ghrelin is an important stomach hormone controlling appetite. Circulating ghrelin levels rise sharply before main meals and decrease once fed. It may be possible that this spike could send a feedback signal to the SCN and be a mechanism for synchronising rhythms. Ghrelin receptors are present on SCN cells (Zigman et al., 2006), and when applied directly to the SCN can alter the phase of the circadian rhythms in mice and hamsters (Yannelli et al., 2007).

Additionally, over the past 10 years there has been accumulating evidence that in addition to regulating hunger, ghrelin has direct effects on learning and memory processes, is neuroprotective, and may have beneficial effects on Alzheimer's disease pathology in mouse models (Carlini et al., 2010; Diano et al., 2006; Moon et al., 2011). In humans, there is an age-related decline in

circulating ghrelin levels (Rigamonti et al., 2002), which is correlated with cognitive decline in non-demented elderly (Spitznagel et al., 2010). There is also some evidence showing that Alzheimer's patients have reduced local brain production of ghrelin (Gahete et al., 2010), suggesting that a decline in ghrelin may be a contributing factor to symptoms. It is possible that appropriately timed administration of ghrelin could be a method for synchronising internal rhythms, while also providing cognitive benefits for Alzheimer's patients (Kent, 2014).

Finding ways to slow the onset of Alzheimer's disease and other age-related neurodegenerative diseases, undoubtedly requires collaboration and an interdisciplinary approach. Studying circadian rhythm disruption in Alzheimer's disease holds great promise for inexpensive interventions. If the uncoupling of biological rhythms partly underlies age-related disease progression, then preventing rhythms from becoming uncoupled may promote overall health and help our body's natural defences against age-related pathologies.

Harmonious interaction of internal and environmental rhythms ensures that physiological processes occur at optimal times. If scientists and doctors look for early cues of internal rhythms becoming uncoupled, we may be able to use a combination of light therapy, scheduled mealtimes, and other interventions to slow down the progression of disease.

I am excited to see whether my very first experiments studying the daily activity patterns of those scurrying rats will provide useful insights for developing effective Alzheimer's disease treatments.



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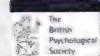
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The Society has offices in Belfast, Cardiff, Glasgow and London, as well as the main office in Leicester. All enquiries should be addressed to the Leicester office (see inside front cover for address).

The British Psychological Society

was founded in 1901, and incorporated by Royal Charter in 1965. Its object is 'to promote the advancement and diffusion of a knowledge of psychology pure and applied and especially to promote the efficiency and usefulness of Members of the Society by setting up a high standard of professional education and knowledge'.

Extract from The Charter



President's column

Dorothy Miell

Contact Dorothy Miell via the Society's Leicester office, or e-mail: presidentmiell@bps.org.uk

We have been doing a lot to develop our international profile recently, with discussions at Trustees about new Memorandums of Understanding with sister organisations around the world, considering how we might support capacity building in countries seeking to develop psychology, and not least with the beginnings of our programme of accrediting undergraduate programmes offered abroad in association with UK universities. As a result I thought it might be interesting to have a column that looked at psychology internationally. When a conversation with a colleague (Robert Logie CPsychol, FBPSS, FRSE, Professor of Human Cognitive Neuroscience at the University of Edinburgh) revealed that he had just been appointed as the first UK-based Chair of the USA's Psychonomic Society, I thought it might be interesting to ask him to do a guest column here to say a little about psychology in the USA. Over to Bob:

'I was a fan of Alistair Cooke's *Letter from America* presented on BBC Radio 4 until shortly before he died in 2004. As a USA-based British journalist he provided major insights for Radio 4 listeners over nearly six decades of political and cultural life in North America. Rarely did he touch on science, but he had a deep understanding of the thinking, memory and behaviour of American citizens and society. While I have never lived in the USA nor matched Alistair Cooke's engaging prose style, in January this year I found myself as the first UK-based Chair of the US-based Psychonomic Society. In case you are wondering, the name is derived from the Greek *nomos* and *psyche* referring to 'laws of the mind'. In the spirit of an Alistair Cooke letter for a British readership, I offer here a brief historical and contemporary context for the Psychonomic Society, and a few

observations about academic psychology in the United States through the eyes of a British psychologist.

During the 1930s and late 1940s, in Cambridge, Massachusetts (MA), Burrhus Frederic Skinner was developing his experiments on the psychology of learning without reference to mental states. Around the same time, in Cambridge, UK, Frederick Bartlett was laying some foundations for cognitive psychology, and in 1946 the Experimental Psychology Society (EPS) was established. Ten years later in Cambridge, MA, George Miller kick-started computational approaches to cognition in the USA, and identified 7 ± 2 as a limit on verbal short-

term memory. Then Chicago, 1959, saw the start of the Psychonomic Society. The UK and US societies had, and have, similar scope and goals. Both were experimental-psychology-focused breakaway groups from the more practitioner-oriented British Psychological Society (BPS) and American Psychological Association (APA), and both remain distinct but have friendly relationships with their larger siblings.

The Psychonomic Society has 2200 members, with 580 based outside North America. It runs six journals: *Psychonomic Bulletin and Review*; *Memory and Cognition*; *Attention, Perception and Psychophysics*; *Cognitive and Affective Behavioral Neuroscience*; *Learning and Behavior*; and *Behavior Research Methods*. There is a conference in November each year (19–22 November 2015, Chicago) with no registration fee. Its website (www.psychonomic.org) had a recent major overhaul, with content organised by another UK-



This month's column features guest Professor Robert Logie, the first UK-based Chair of the USA's Psychonomic Society

Society milestones

The Society has welcomed its 50,000th member: Mr George Kitsaras, Assistant Psychologist at Royal Berkshire NHS Foundation Trust, who joined soon after his graduation and arrival in the UK.

George is currently taking a master's degree in clinical psychology at the University of Reading. He said: 'I was aware of the importance of BPS before coming to the UK. Joining was my first goal after my graduation back in Greece because many of my colleagues highly recommended it. One of the reasons I became a member is that I believe a career in psychology in the UK is linked with BPS membership due to the unique networking opportunities that the Society offers and its international prestige. Also the access to a wide range of journals and reductions on training opportunities are particularly valuable at this point in my career.'

George is looking forward to his prize of attendance at the



The Society's Royal Charter

Society's 2015 annual conference in Liverpool (5–7 May). He also receives a year's free Society membership.

The milestone continues the yearly growth that has seen

membership rise from over 10,000 in the early 1990s. Society President Professor Dorothy Miell said: 'All of our members – from those who have been loyal activists for years to those joining now – are the lifeblood of the Society. As a membership organisation our strength comes from the effect that each and every one of our members can make in their work promoting psychology – whether by teaching, practising or researching in so many different settings. We are proud to welcome each new member and to offer them support in their work.'

The Society has also celebrated another milestone, the 50th anniversary of the granting of our Royal Charter – the principal governing document, which established the objectives by which the Society still operates today. To mark the occasion, the President, Professor Dorothy Miell, has sent a message of Loyal Greeting to Her Majesty the Queen on behalf of all members.

The Charter has undergone a number of revisions over the course of the last 50 years – perhaps most notably in 1987, when we gained authority to run a Register of Chartered Psychologists. The current version can be read at www.bps.org.uk/what-we-do/bps/governance/royal-charter-statutes-rules/royal-charter-statutes-rules.

based psychologist, Stephan Lewandowsky (Bristol). It has launched several new initiatives, including early career and graduate student travel awards, and an annual competition for a leading-edge workshop linked with a journal special issue and a conference symposium. The 12 members of the Governing Board will be presenting their research in Edinburgh on 17 July this year, followed by a jointly sponsored symposium at the European Society for Cognitive Psychology conference in Cyprus (17–20 September). In May 2016 there will be an international meeting in Granada, Spain.

'Love it or loathe it, there is no Research Excellence Framework in the USA, but there is no government block grant for research that depends on grants and contracts. Many university staff are on nine-month salaries each year for teaching only, and add on a 'summer salary' by teaching summer courses or by building three months' salary into research grants. There is no external examining or nationally regulated undergraduate curriculum for psychology, yet some teaching-intensive colleges have very

strong reputations for teaching quality; as do some research-intensive universities, although the latter often rely on postgraduates and postdocs to deliver the teaching. Postgraduate professional practitioner training is regulated by the APA.

'Student fees can amount to a small fortune, unless students obtain scholarships. In contrast, funding for postgraduates is common, often in return for teaching and research assistance. Student ratings are taken seriously but there is the inevitable tension between teaching quality and teaching popularity that crops up whenever students see themselves as paying customers rather than participants in learning. The wealthier (and some less wealthy) US universities build larger and smarter student facilities and university buildings to compete with rival institutions for attracting undergraduate students, and this elevates the fee levels. The 2014 film documentary *Ivy Tower* offers a critical perspective on spiralling university fees in the USA. It questions the cost/benefit balance, and raises the spectre of student

debt levels possibly leading to a collapse of the university system akin to the financial meltdown of 2008. Whether the danger is real or for dramatic effect in the film, there are serious lessons for the UK, and government budget constraints in both countries are a real concern.

'As in the UK, psychology in the USA has seen a vibrant diaspora into neuroscience, artificial intelligence, human factors, and education, among others. Rather than an identity crisis, the diversity could be seen as a sign of the growth and influence of psychology within other disciplines. There remains demand for the core of psychology, highlighted by its continued student popularity worldwide and the volume of high-quality peer-reviewed published research. UK psychology as a whole seemed to do quite well in the REF, and the 2014 meeting of the Psychonomic Society in Long Beach, California was the largest ever with 2450 delegates. So, to end this letter on a positive note, the discipline of psychology on both sides of the Atlantic is facing challenges but appears to be alive and well.'



society

New guidelines for expert witnesses

The Society has recently published new guidelines to represent best professional practice for psychologists acting as independent experts, or as professional witnesses on behalf of their employer. This is the fourth edition, replacing all prior versions.

The role of psychology in supporting various legal processes has expanded markedly in recent years, with a welcome increase in the influence of research from psychology. This has involved

an increasing number of members undertaking expert witness work, including those whose research or practice may not have routinely involved them in contact with the legal system. The new guidelines are therefore designed to be as clear and accessible as possible. They also reflect a number of revisions in the advice to psychologists, resulting from recent legal changes and increased levels of accountability of experts.

In light of such changes the guidelines place a greater stress on issues of ethical and professional conduct. The importance of maintaining professional standards of conduct, within often adversarial settings, is stressed. In line with the Society's role in promoting psychology, the need to ensure that psychology as a discipline and a profession is not brought into disrepute is stressed.

In support of Society members the Expert Witness

Advisory Group of the Society is also available to address ethical and professional issues raised from this area of work. Any ethical or professional concerns can be raised with the group and should be addressed to the Chair of the Expert Witness Advisory Group, at the Leicester office of the Society. A copy of the guidelines is available via tinyurl.com/oydxy3x.

*Professor David Crighton
Chair, Expert Witness
Advisory Group*

CAMHS service concerns

Senior mental health professionals working in child and adolescent mental health services (CAMHS) are reporting major concerns about reductions in service for children with mental health problems.

These concerns and others listed were revealed in a 2014 survey of clinical psychologists, members of the Division of Clinical Psychology's Faculty of Children Young People, and their Families. The picture that emerged was one of rising waiting times and a lack of age-appropriate services not prepared to intervene early, resulting in children and young people experiencing

difficulties that are more complex and difficult to treat when they are finally seen.

BPS President Elect Professor Jamie Hacker Hughes said: 'The Society welcomes the renewed focus from the NHS England and Department of Health task force report on prioritising CAMHS in England. Our representative on this task force emphasised the need for an overhaul. We stressed this further in the Society's response to the Health Select Committee inquiry into child and adolescent mental health and CAMHS. In particular, we do welcome the acknowledgment of both the scale of the problem and



the need for a radical rethink of how services for children and young people with mental health difficulties are conceptualised, commissioned and delivered.'

The Society survey confirmed significant unease about reductions in staffing, particularly of more highly skilled professionals. Some 62 per cent of services had decreased their overall staffing levels in the last three years, and 42 per cent reported further cuts were being planned. Other survey findings included that 71 per cent reported their service had tightened the acceptance criteria and raised the severity thresholds for being seen; quality of provision had decreased in 66 per cent of services; and 53 per cent had

seen a move to more diagnosis-led, medicalised approaches.

Professor Jamie Hacker Hughes said: 'We are seriously concerned that over half of respondents reported a move to more diagnosis-led, medicalised approaches, given the significant weight of evidence in favour of psychological interventions for the majority of child mental health issues. We welcome opportunities to build on existing work and relationships with other professional groups and hope the task force report will help contribute towards the much-needed implementation of essential service transformation for children and young people with mental health difficulties.'

SOCIETY NOTICES

'Introduction to ACT for long-term conditions' workshop See p.258

Psychology in the Pub See p.282

Annual Conference, 5–7 May, Liverpool See p.1

BPS conferences and events See p.308

2015 CPD workshops See pp.310–311

North East of England Branch 'The perils and potential of talking about genes and achievement', 19 May, York See p.313

Book Award – call for nominations See p.313

William Inman Prize – call for nominations See p.315

Psychology of Education Section annual conference, 23–24 October, Liverpool See p.315

Stirring stuff in Stirling

February, and it was time for psychologists from across Scotland to gather for BPS Scotland's Annual Scientific Meeting and Scottish Branch AGM. This year we gathered in Stirling to share news and views, meet old and make new friends and get up close and personal with cutting-edge research.

The new Special Group for Independent Practitioners started our day off with a vibrant Café Psychologique. Based on the World Café approach (www.theworldcafe.com/method.html) Barbara Douglas, Christine Hamilton and Carole Allan facilitated a session that gave us a feast of food for thought about what it means to be an independent practitioner and how the new Special Group can support us.

We continued the tradition of distinguished speakers at our Scientific Meeting: incoming Society President Professor Jamie Hacker Hughes, and Professor Nanette Mutrie.

Professor Hacker Hughes spoke about 'Military and veteran psychological health in the British Isles'. We heard that post-traumatic stress has a long history, appearing in text from ancient Mesopotamia through to Shakespeare plays and of course in modern times. Since World War 1, psychologists have been in the thick of the battle to understand shell shock, Gulf War syndrome, post-traumatic stress, successfully challenging purely medical models and treatments. Psychologists have developed better selection methods, and we were privileged to be joined by Professor Sidney Irvine, whose work 50 years ago on selection is still used today. Psychologists have worked on Morse code, time and motion, and cockpit design.

In a long list of psychological theory, research and practice, Professor Hacker Hughes highlighted our role in developing effective treatment for psychological casualties, using strategies based on Proximity (keeping people in the field), Immediacy (treat as quickly as possible), and Expectancy (that you will recover).

In future, Professor Hacker Hughes said we need to focus on the increasing diversity and ageing of veterans, and on the growing numbers with missing limbs (due to better body armour and helmets). We need parity of esteem across the armed forces and an armed forces network to build effective links with health, families and veteran organisations

to provide oversight, leadership and coordination of a range of services from health to housing. The Veterans Commission (unique to Scotland at the moment) is an excellent way to begin to achieve this.

Our second speaker was Professor Nanette Mutrie whose talk was 'That pedometer – it's an amazing wee device: Is self monitoring the best bet for physical activity behaviour change?'. It wasn't long before Professor Mutrie had us all on our feet, painfully aware of just how long we'd been sitting down. We started off with a jog through the evidence on inactivity: that is it's as risky for our health as smoking, if not riskier. As little as 14 hours sitting a week can have health implications – even if you do a lot of physical activity. We heard that we're walking less and less; the average Scot walked 73 miles less last year than they did a decade ago. And yet the physical and psychological benefits of walking are considerable. Countries round the world are focusing on walking: the Toronto Charter is a global call to action for increasing physical activity and active travel (walking, cycling, running) is much more common in Netherlands and Denmark. Pedometers are very effective in helping people make and sustain behaviour change, fitting well with the need to set goals and self-monitor.

Professor Mutrie told us about a programme for football fans (see Football Fans in Training resources at www.ffdit.org.uk/page2/index.html). Men

are often hard to reach around weight loss, but by working with their love of football and club affiliation, Professor Mutrie developed a highly effective behaviour change programme that men joined and stuck with. Banter with their mates and being part of the club were major motivators for them.

It was another great day, and once again thanks to Morag Taylor (Chair of DCoPS) and Christine Hamilton (Chair of DOPS) for sponsoring the Scientific Meeting, and our illustrious speakers for inspiring us. Also thanks to Joan Fraser, the Regional Advisor to Scottish Branch who supported us to organise the event and also ensured that everything ran like clockwork on the day.

For BPS members in Scotland and the Scottish Branch, it's going to be a busy year. We've our annual undergraduate and the national postgraduate conferences, both in Glasgow this year. Our work supporting the development of a Scottish teaching qualification in psychology continues, and we will be supporting BPS national priorities round dementia end of life care, brain injury and offending, and behaviour change. The Branch is also actively engaged with the Mental Welfare Commission, the Scottish Health and Well Being Partnership and working with university psychology careers advisers. If you're a Scottish Branch member and want to get involved and do your bit, get in touch.

*Dr Sue Northrop
Chair, BPS Scottish Branch*

Dementia research funding

The Society has welcomed the UK government's commitment to dementia research that was announced recently by Prime Minister David Cameron. With some 850,000 people currently living with dementia in the UK, and that figure expected to rise to one million in the next decade, the challenge of dementia is significant.

Society President Professor Dorothy Miell said: 'The government's announcement of £300m to be spent on research into

dementia over the next five years is significant. This is a complex area of research. Whilst overall awareness of dementia has increased thanks to recent campaigns, funding for research is vital if we are going to be able to understand dementia fully in order that we can ultimately help to improve the lives of hundreds of thousands of people.'

'Psychology and neuroscience have played a significant role so far in our understanding of dementia, and this funding pledge will

be an opportunity for many members of the Society to continue to contribute to that important work.'

Professor Linda Clare, who is the Chair of the Society's Dementia Advisory Group, added: 'This investment for research is certainly good news. Alongside stepping up the research effort, it is vital to offer high-quality support for people living with dementia and their families. Psychologists are at the forefront of improving care and service provision.'



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Annual Conference	5–7 May	ACC, Liverpool	www.bps.org.uk/ac2015
Trainee Conference	6 May	ACC, Liverpool	www.bps.org.uk/trainee2015
Supervision Conference	7 May	ACC, Liverpool	www.bps.org.uk/supervision2015
Division of Forensic Psychology	1–3 July	Manchester Metropolitan University	www.bps.org.uk/dfp2015
Division of Counselling Psychology	10–11 July	Majestic Hotel, Harrogate	www.bps.org.uk/dcop2015
Qualitative Methods in Psychology Section	2–4 September	Anglia Ruskin University, Cambridge	www.bps.org.uk/qmip2015
Developmental Section & Social Section	9–11 September	The Palace Hotel, Manchester	www.bps.org.uk/devsoc2015
Division of Health Psychology	16–18 September	Radisson Blu Portman, London	www.bps.org.uk/dhp2015

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The submission process and relevant forms can be found on our website: **www.bps.org.uk/cpd**.



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Mindfulness and health (DHP)	7 April
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Children and PTSD (Crisis Section)	20 April
Understanding and enhancing the social and emotional development in the early years (Cross network)	21 April
Complaints against psychologists: Lessons to be learned from HCPC's 'fitness to practise' proceedings (Cross network)	24 April
Qualitatively-driven mixed methods research (Cross network)	28 April
Cognitive analytic therapy in a forensic setting (DFP)	1 May
Introduction to evidence-based hypnosis and hypnotherapy (Cross network)	7 May
Approaches to assessing early parent-child relationships (DCP Perinatal Faculty)	12 May
Engaging the disengaged: Using motivational interviewing as a tool for young people and adults in education contexts (DECP)	14 May
Expert witness: Responsibilities and business (Workshop 1)	14 May
Expert witness: Report writing (Workshop 2)	15 May
Sharing best practice of diagnosing and assessing adults with neuro-diversity in the workplace (DOP)	18 May
Behaviour management in a trauma context (Developmental Section)	19 May
Self-publishing: How can psychologists harness the opportunities? (SGIP)	21 May
Essential neuro-linguistic skills for coaching psychologists (SGCP)	27 May
Parenting across cultures (DCP) (Manchester)	1 June
Working with offenders with intellectual disability in a forensic setting (DFP)	3 June
Expert witness: Court room evidence (Workshop 3)	11 June
Expert witness: Using psychometrics (Workshop 4)	12 June
Peer group supervision: A structured model for facilitation of community working & professional development (Cross network)	15 June
Meta-synthesis (QMIP)	16 June
Cognitive assessment of children and young people (Day 1) Glasgow (Cross network)	18 June
Working successfully in private practice	25 June
Self-compositioning coaching: A method for leadership development (Cross network)	26 June
Cognitive assessment of children and young people (Day 2) Leeds (Cross network)	1 July
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Part 2 (1 day training)

7 May 2015, 19 June 2015, 3 September 2015, 30 September 2015, 4 November 2015

Part 3 (3 day training)

13-15 May 2015, 9 - 11 September 2015

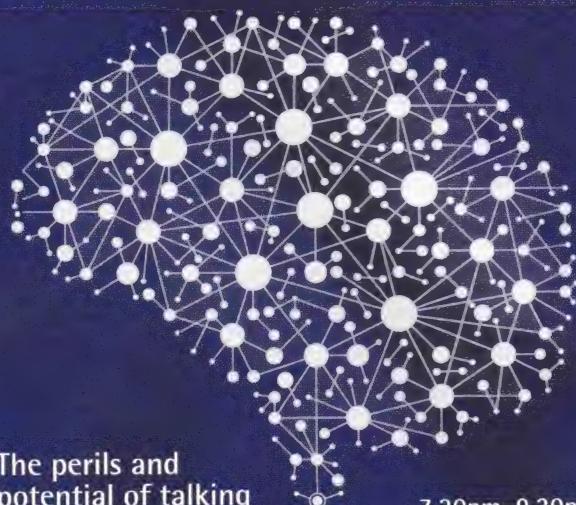
For more information contact

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- Pre-tertiary text
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William Inman Prize 2015



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The William Inman Prize was set up with a bequest from Dr William S. Inman, who died in 1968. Dr Inman was an ophthalmic surgeon and psychoanalyst and the prize was established in memory of his work. The Research Board of The British Psychological Society is seeking nominations of appropriate published work.

Nomination criteria

- The subject of the published article should be the effects of psychological factors upon physical conditions. Preference will be given to psychodynamic or psychotherapeutics factors and to conditions of the eye.
- The submitted work should have been published within the last five years (i.e. between June 2010 and June 2015).
- A nomination statement (of around 500 words) detailing why the article is worthy of the award must be included; together with a copy of the article.
- Normally, the recipient of the award would be resident in the UK.

Further details can be obtained from Liz Beech (liz.beech@bps.org.uk).

Prize

In keeping with the original bequest, the recipient of the prize will receive £2,000 to contribute towards the costs of books and/or equipment.

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Motivational profiles and student engagement: An integrative perspective

Professor Reinhard Pekrun, Department of Psychology, University of Munich
Academic Emotions: The role of competence beliefs

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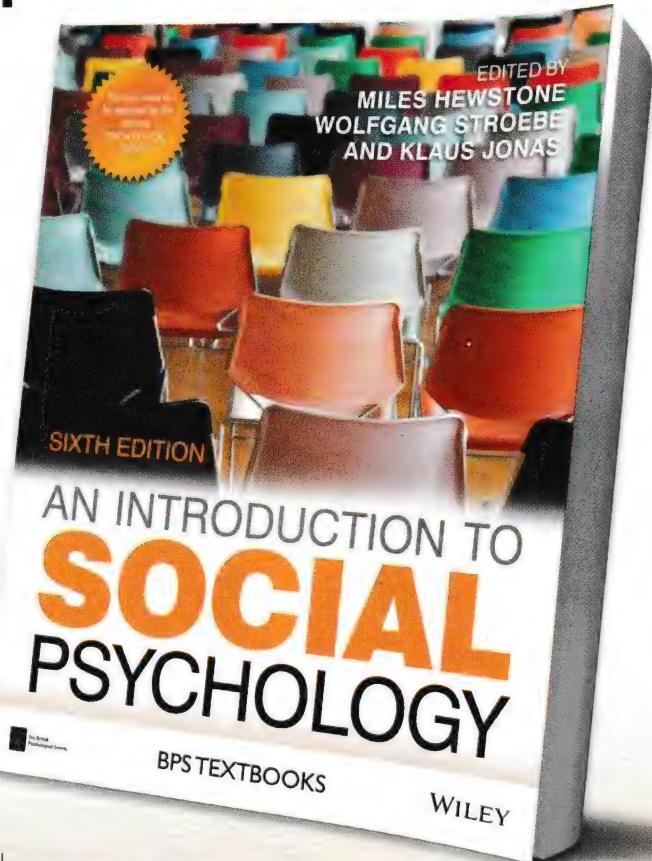
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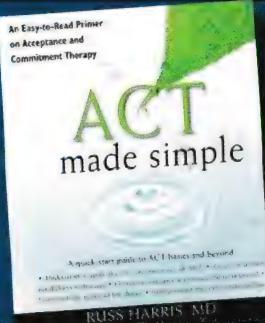
Two-day INTERMEDIATE level ACT Made Simple workshop, Cecil Sharp House,

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This INTERMEDIATE level workshop will cover case conceptualisation in both clinical and non-clinical populations: how to conceptualise any client problem in terms of the ACT model, from clinical disorders such as depression, anxiety, addiction to non-clinical issues such as work stress, performance anxiety, fear of failure and low self-confidence. It also covers working with mandated or coerced clients; getting unstuck (for both clients and therapists); 'selling ACT' to your clients; getting to values when your client says 'I don't know'; overcoming resistance and motivating the unmotivated; anger and resentment; compassion and forgiveness. This workshop is full of experiential exercises and shares fantastic tools for trans-diagnostic case conceptualisation, interrupting disruptive in-session behaviour, staying on track and using the model flexibly. Registrants are required to have attended introductory level training.

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The journey of a psychologist in public health

Amanda K. Bunten outlines her role in improving health at the population level

As an undergraduate psychology student at Southampton University I sought part-time employment to help fund and complement my studies. During this time I worked as an applied behavioural analysis tutor with children diagnosed with autistic spectrum disorder and as a rehabilitation support worker for a young man with acquired brain injury. Having the opportunity to experience the practical application of psychology in

different settings enabled me to start considering my career opportunities. On completing my degree I applied for a self-funded place on the taught Master's in Health Psychology at City University, London which I went on to complete full-time in one year.

Whilst trawling the NHS jobs website, on completion of my master's, I came across an advert supporting a Director of Public Health (DPH) in a deprived inner

London borough. Despite never having heard of 'public health' as a discipline before, I was intrigued and felt my skills matched the job specification.

I was fortunate enough to become a member of this team as a Public Health Strategist. Little did I know, but this was to be the start of my journey understanding, integrating, and championing the synergy of health psychology and public health.

Over the five years I worked in a local public health team I led on areas of health improvement, health protection and commissioning of services to improve health and well-being. I was involved in designing, implementing and evaluating services, working collaboratively across the local health system and with

local communities to improve health outcomes and reduce inequalities. I designed and delivered targeted campaigns, training to the public and various healthcare professionals, wrote strategies and action plans, developed and managed contracts, and implemented service improvements working with providers and users of services.

I worked on issues including sexual health, planning and responding to pandemic flu and improving uptake of the seasonal flu vaccination, health emergency planning for the London 2012 Olympics and Paralympics, and supporting the implementation of a TB cohort review locally. This helped me recognise the importance of health psychology not just in delivering individual interventions but also in achieving improvements in health and well-being across a local population at a strategic level, ensuring services were meeting the needs of the local communities and providing more tailored intensive interventions where needed.

To increase my understanding of population level health I completed a course on epidemiology at the London School of Hygiene and Tropical Medicine. I was encouraged to pursue specialist public health training; however, I decided I wanted to continue my professional development in health psychology. I was lucky enough to be supported by my Director in applying for a place on the Professional Doctorate in Health Psychology at City University, London, and subsequently completed the mandatory two years' supervised practice in this local public health team.

During this time I was aware of only one other health psychologist working in a similar role – my academic supervisor at City University. I was astonished that there appeared to be so few health psychologists working within the public health sphere. The roles that did exist were most likely to be found in a research or clinical setting, working in smoking cessation or rehabilitation services, where supporting behaviour change was still



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predominantly focused on the individual through 1:1 or group behavioural support.

In a society where the biggest preventable killers are now nearly all lifestyle related, the need to find opportunities to enable people to make health-enhancing choices and behave in a way that has a long-term positive impact on their health and well-being is paramount. The five big preventable health killers – heart disease, stroke, cancer, lung and liver disease – account for more than 150,000 deaths a year among under-75s in England alone. Making the healthier choice the easier option, creating opportunities, harnessing motivation and ensuring capability are key for behaviour change to occur. Providing health and social care professionals with effective skills to support behaviour change is one piece of the puzzle, but we need to engage with people across the life course whilst making the most of life transition points, and engage with people where they live, work, play and pray. We need to explore opportunities for intervention in the environment around us, engaging with teachers, parents, employers and the commercial sector. Many of us are encouraged to plan for our older age by investing in pensions and insurance, but what about developing effective self-management skills, identifying our community assets and understanding our level of resilience? There's a clear role for the application of health psychology across prevention, promotion, managing long-term conditions, adapting to and maintaining change.

In 2013 I saw through the transition of the local public health function into local government as a response to the Health and Social Care Act 2012. At this time the public health system became fragmented and, despite Directors of Public Health retaining the responsibility for the health and well-being of the local population, many services were now to be commissioned by different bodies. As the role of the local public health team started to shift more into commissioning and contract management, the applicability of health psychology was seen more in terms of the role of providers of services.

I still very much saw the role health psychology had to play in public health and in September I became aware of a new Behavioural Insights Team within the newly established National Executive Agency, Public Health England (PHE). The ambition of this new organisation struck a chord with my passion to reduce health inequalities and translate evidence into practice.

I was amazed to see health psychology as a prerequisite for the new roles and I jumped at the chance of being part of this team. It became clear to me that this new executive agency had indeed grasped the benefit of integrating health psychology within the public health agenda at a population level. I joined the team in November as a Behavioural Insights Analyst working alongside a Lead Behavioural Insights Researcher (Dr Tim Chadborn, expert in epidemiology and field research), and a Behavioural Insights Advisor (Anna Sallis, a Chartered Psychologist and Registered Practitioner Health Psychologist).

Behavioural insights is an applied approach that draws on insights from behavioural science (including research in behavioural economics, social anthropology and psychology) to understand why people behave as they do, and the context in which decisions are made. It accepts that dual process models of behaviour (conscious/reflective and less conscious/automatic system) are involved in decision making and explores the importance of the relatively under-researched automatic processes.

Our team has a remit to test the application of behavioural insights with a focus (but not exclusively) on automatic processes, to facilitate health-related behaviour change, and support population-level improvements in health and well-being. My role involves designing behaviour change interventions through the application of behavioural insights, to enable people to make positive health choices that will have an effect on population-level health. We implement and evaluate these robustly, with the aim of driving scalable change through the translation of evidence into practice, whilst informing policy.

At times this feels like an unachievable task, particularly when major developments in public health are often linked to restriction or legislation: think of the 1854 cholera outbreak in Soho, where the removal of the handle of the pump in Broad Street reduced the transmission of infection, and more recently the introduction of the smoking ban. Restriction and legislation are both viable levers that can be used to achieve population-level behaviour change where appropriate, but there are many other behaviour change techniques that can be used at low cost and that can address memory, attention and decision processes, the environmental context and our social influences, depending on the behaviour that is being targeted. What these significant public health challenges actually demonstrate is the importance of

the collation of evidence for the development of science, which results in knowledge that can be applied and translated into action for social good.

At present we aim to work with local areas where there is a clearly defined issue, where we can provide expert advice and where possible, support the implementation and evaluation of an intervention. I spend a lot of time out of the office on field visits and meeting with those involved in delivery, provision and management of services. I think that's necessary to gain an understanding of the context in which the behaviour occurs, and to collect data and monitor change through objective behavioural outcomes. I also conduct literature reviews to help inform an understanding of the health issue and behavioural components.

Once the target behaviour is identified we explore the factors associated with maintaining the current behaviour and potential opportunities for intervention. If appropriate a behavioural analysis will be conducted using COM-B and the Theoretical Domains Framework, and then elements from relevant frameworks including the Behaviour Change Wheel, Behaviour Change Taxonomy, MINDSPACE and EAST are used to help inform the intervention design.

Criteria for conducting behavioural insights research trials include considering the impact (consideration of health inequalities), affordability, acceptability, scalability, feasibility of trial implementation and evaluation, objective behavioural outcome measures, value added by behavioural insights and alignment with guidelines and priorities.

We have a formal partnership with the Behavioural Insights Team (who have recently become part mutualised from the Cabinet Office now teaming up with the charity Nesta, the UK's Innovation Foundation), to help build our team's expertise in designing and applying behavioural insights to public health policy. We also work in partnership with other government departments, academics and businesses to identify collaborative opportunities to apply behavioural insights, support implementation and disseminate findings. It is exciting to be developing close working relationships with leading academics in health psychology and to have met with the Public Health Minister to discuss behavioural insights work and future plans.

I am currently working on research trials to test the application of behavioural insights to improve the referral process to local stop smoking services for pregnant smokers; increase

the uptake of NHS Health Checks; and reduce rates of childhood obesity. Other research trials our team has been working on include testing changes to the Stoptober website to increase the number signing up to quit; assessing referrals to promising interventions to reduce social isolation; and evaluating interventions to reduce anti-microbial resistance. As we develop as a team within PHE and as a wider discipline across government, our approach and remit will inevitably evolve.

Having attended many research methods and statistical workshops over my years of training in psychology has provided me with a good grounding for understanding and conducting research. But the practical realities of designing

appropriate, robust field research trials feels quite different. I am learning a great deal trying to work with existing infrastructures and databases in a complex healthcare landscape, with data protection challenges and electronic systems that in many instances are not well integrated.

I had found it challenging to find opportunities in my previous role to develop my research competencies. Within this role I find I am using and developing all the expected health psychology competencies every day!

The PHE Behavioural Insights Team also has a key role in building capacity for applying behavioural insights to health interventions across the public

health landscape. We have developed a master class that we are delivering internally to PHE staff and externally to local public health systems on applying behavioural insights and designing population level interventions.

We are keen to identify expertise across the public health field in population-level health behaviour change and find examples of local practice where behavioural science is being harnessed. Hertfordshire County Council has decided in order to move towards achieving desired improvements in public health that they need to utilise evidence-based behaviour change principles at the individual, community and population levels. They have therefore been exploring

To volunteer or not to volunteer, that is the question

Samara Aziz, Sahdia Parveen and Jan R. Oyebode give three perspectives

Psychology graduates, particularly those aspiring to become clinical psychologists, are entering an increasingly competitive field. A good degree is not enough: relevant work experience is essential. To develop their personal, clinical and research potential, an increasing number of prospective applicants to further training are seeking voluntary research positions. In this article we present our experience from three sides of the triangle. Samara is a graduate who sought voluntary research experience to strengthen her application for clinical psychology training. Sahdia is a postdoctoral research fellow at the University of Bradford who supervised Samara during her research placement, and Jan is Professor of Dementia Care at the University of Bradford, whom Samara approached for research experience.

Samara's perspective

Whilst I had been successful in gaining clinical experience within mental health services, I wanted to develop my research

skills further. I had gained some experience of conducting research during my undergraduate and master's degrees but wanted to expand my knowledge. With the recent policy drive to raise awareness of dementia and a push for early diagnosis, I became interested in the ways that we could raise awareness of dementia, particularly within minority ethnic communities. After reading research by clinical psychologist Professor Jan Oyebode at the Bradford Dementia Group (BDG), University of Bradford, I contacted her to see if there were any opportunities for me to become involved with ongoing projects as a volunteer research assistant.

I was able to gain practical research experience by conducting thematic analysis on data collected during dementia awareness events that Jan and Sahdia had been involved with. This was a great starting point for me, developing my qualitative data analysis skills. Putting together the 'findings' section of the presentation for an international conference helped me to summarise my

understanding of the data and organise how to present this for a conference. Speaking on a public platform was a very daunting prospect, but after support and advice from Sahdia I was able to work through my nerves.

Although data input and



Samara Aziz

analysis is a vital part of research, I was conscious that I also wanted to gain as much practical experience as I could. After discussing with Sahdia my goals for volunteering and what I hoped to gain, I was presented with the opportunity to lead on a small research project that fitted with the research group's interests. Initially, I held back in group discussions and my lack

of confidence led me to become frustrated and disappointed in myself for not working to my full potential. However, my initial reservations were soon a distant memory as I progressed with the project. Once I had found my feet, I started to realise how great this opportunity was. This project allowed me to develop many key research skills including study design, ethical considerations, recruitment, data collection and analysis, as well as literature review, developing my critical reading and critical thinking skills.

I am currently in the process of preparing this work for publication and aim to publish a report in a peer-reviewed journal. I am extremely grateful to both Jan and Sahdia for giving me the opportunity and their time to work on this project. It exceeded my expectations of what I could achieve as a volunteer research assistant.

Sahdia's perspective

Due to Samara's research interests and my wish to develop mentoring skills, it was decided it would be mutually beneficial if I provided the day-to-day support for Samara. Whilst I had supervised

the market for developing a Behavioural Science Unit.

We have been working with forward-thinking Director of Public Health, Jim McManus on this new initiative. A market-testing event was held in June where a number of different potential providers proposed different models in which this vision can be realised. We will be continuing to support Hertfordshire in this venture and are keen to identify other areas working to utilise evidence-based population-level behavioural change initiatives embedding

"I am encouraged by how health psychology appears to be gaining recognition"

behavioural science in public health.

I am now an active member of the Health Psychology in Public Health, East of England network and look forward to identifying other practitioners across England who share my vision and ambition and exploring more opportunities to apply behaviour change principles to achieve population-level behavioural change.

I am really encouraged by how health psychology appears to be gaining recognition within the public health sphere and see my role in championing this symbiotic relationship, raising

awareness of the applicability of behavioural science to the health and well-being agenda. We still have a long way to go to bring implementers, academics and policy makers together not just in the field of health but across the wider determinants, to make a real impact on the health of our population and to ultimately improve people's lives.

I Amanda Katharine Bunten is a Stage II Health Psychology trainee enrolled on the Professional Doctorate in Health Psychology Training Programme, City University London. She is working as a Behavioural Insights Analyst in the Public Health England Behavioural Insight Team. Amanda.Bunten@phe.gov.uk

undergraduate and postgraduate research projects in my previous posts, I had limited experience of managing research assistants. Managing someone of a similar age to myself was an anxiety-provoking thought! Initially Samara supported my ongoing projects, particularly around awareness of dementia in the community.

Although her contributions were valued, I soon felt Samara's motivation to be slipping. I surmised this might be because this work was mainly office-based, with Samara collecting information from local community partners, typing up notes and conducting thematic analysis of the data. I set up a meeting with Samara and we revisited her main motivations for volunteering, what she hoped to gain and what her current skills were. We both felt that she would benefit from taking ownership of her own research project, but this would need to complement the work of the group. As all busy researchers will relate to, I had several research ideas on my 'things to do' list that I had not been able to explore. I presented Samara with a research question: 'What are the barriers and facilitators to engaging minority ethnic communities in health research?' From there Samara designed and conducted the research study.

Along the way we've

experienced a few challenges and learned a lot. For example, as researchers we develop thick skins dealing with negative feedback from reviewers, funders and each other. I was very conscious that Samara had yet to develop this thick skin and may be sensitive to negative feedback. Perhaps due to my lack of managerial experience I always felt anxious about providing feedback. I eventually implemented the 'sandwich approach' – presenting negative feedback in between two positive comments. I tried to ensure any criticism was constructive.

I was very mindful of ensuring Samara had as many opportunities as possible to develop her skills and suggested she present some of her data analysis at a conference. I had to deal with my feelings of guilt for putting her through such a frightening experience! Despite sleepless nights, the conference was a great experience for both of us.

Overall my experience of working with a voluntary research assistant has been very beneficial. I have gained valuable experience in mentoring a peer and have had the pleasure of watching her confidence as a researcher grow. Samara's contributions to our projects have been very valuable. On a more personal level, it was nice to have moral support whilst I recruited

participants at the community groups, plus her ability to drive us there was a major bonus!

Jan's perspective

I have spent my career in clinical psychology with older people and moved, after 11 years as Director of the Clinical Psychology Doctorate at the University of Birmingham, to my current research professorial post in 2013. As BDG is well known, we get a steady stream of requests for help of one sort or another, and often feel hard pushed to respond. However, when Samara contacted us, the efforts of good psychology graduates to get places on clinical psychology training courses were fresh in my mind, and I felt that I would like to be helpful to her if possible. I was also motivated by the fact that clinical psychology work with older people tends to be low on the list of priorities of trainees, who cannot help but imbibe society's ageist prejudices... whenever someone shows a spark of interest I always feel I'd like to fan the flame.

It felt important to approach the process formally, obtaining Samara's CV, interviewing her, asking about references, obtaining appropriate checks and finding out what was expected from the university in terms of formal process. Realising that, if we took her on, I would not have enough direct

time to spend with Samara myself, asking Sahadia to take her under her wing seemed to be a possible way forward.

One of the anxieties for me was about letting go sufficiently to allow Sahadia to take forward her ideas with Samara. If I had tried to control matters or be too involved, it would have held up progress, which would have been frustrating for everyone. On the other hand, not being involved would have made me feel guilty of neglecting my responsibilities. I dealt with this by making sure I took time to discuss with Sahadia the direction she was taking with Samara. I also needed to make sure Samara was able to work to a standard that was appropriate. In this respect, I volunteered to be a pilot research participant, letting Samara try out her qualitative interview with me. This provided her with a trial run and allowed me to offer her feedback on her interviewing skills. Finally, we put some three-way meetings in our diaries to keep the arrangement under review.

We were all able to benefit from this tiered arrangement: Samara gained research experience; Sahadia supported and supervised a colleague; and my group received both general help and Samara's additional study. So graduates, seek voluntary research positions; research groups, provide them. It's a win-win situation!

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care in mind:

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Location: Stockport, North West
Closing Date: 29th April 2015

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The post holder would have considerable autonomy to shape and develop their role providing direct clinical input, supervision, consultation, teaching and clinical leadership within a multidisciplinary setting. We are committed to the development of our staff through CPD and training and are active in the field of research. The organisation also has very good links with the North West Clinical Psychology Doctorate Courses.

If you would like to discuss this post further or want to arrange an informal visit please contact: Dr Rachel Scullion, Consultant Clinical Psychologist on 0161 638 3285. Please email admin@careinmind.co.uk for an application pack, job description and person specification.

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This new role has arisen as part of the company's ongoing growth and development. The successful candidate will become a key member of our enthusiastic and supportive team, working alongside other psychologists and professionals to provide direct clinical work, training and consultancy.

This role would be ideally suited to a clinician with some experience who wishes to develop skills whilst making an informed and enthusiastic contribution to the development of our work and knowledge base in this challenging field.

Please forward a CV and introductory letter to: david.sheffield@halliwellhomes.co.uk. Informal enquiries welcome: Dr Christopher Robinson, Consultant Clinical Psychologist on 0161 437 9491. Closing Date: 27th April 2015

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Senior Lecturer in Psychosis Studies

Job Reference: THW/15/059639/117

We are looking for a candidate with a background in psychiatry, psychology, neuroscience, or related discipline to join the Department of Psychosis Studies within the Institute of Psychiatry, Psychology & Neuroscience (IoPPN) at King's College London.

The postholder will work in one of the world's largest research groups carrying out research on psychosis and will lead one of the department's successful MSc teaching programmes.

The post holder will lead the organisation and delivery of teaching, learning and assessment of postgraduate students on the Mental Health Studies MSc. This is a key teaching role within the IoPPN. Approximately 50% of the post holders' time is allocated to this role, although

this will vary up and down according to the academic calendar. Outline the key areas of the job description and the essential elements of the person specification.

The successful candidate will be expected to conduct and publish (in peer-reviewed journals) research of international quality on psychosis; apply for and obtain external grant support for research and contribute to the ongoing research programme on psychosis within the department. The department has particular strengths in research on the early phase of psychosis.

The appointee will be Programme Leader for the Mental Health Studies MSc, the largest MSc at the IoPPN, with 120 students and will be required to supervise student and staff.

KING'S
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LONDON

The appointment will be made depending on relevant qualifications and experience, within the Grade 8 scale, currently £48,743 to £56,482, per annum plus £2,323 per annum London Allowance.

The post will be a full time indefinite contract. The closing date for applications is 2 April 2015. Equality of opportunity is College policy.

For any informal inquiries about the post, please contact Professor Philip McGuire via email at philip.mcguire@kcl.ac.uk

To find out more information and to apply for the post, please go to the following webpage: www.kcl.ac.uk/jobs

Job Title: Senior Lecturer in Psychosis Studies

Employer: Institute of Psychiatry, Psychology and Neuroscience (IoPPN), King's College London

Professor Anthony David, Vice Dean, Academic Psychiatry talked to me about the role. I asked him if it was a new role or a replacement. 'It's a replacement, but we've formalised it more so that teaching, organisational and research elements are explicit and balanced. The Mental Health Studies MSc has real strengths in face-to-face and small group teaching, the dissertation is well supervised and there are very close links with the South London and Maudsley NHS Foundation Trust. Such collaboration with clinical teams enables us to involve patients, and allows rapid translation of research findings into clinical practice. In this way, our work more immediately influences the care of those experiencing psychosis. We don't want to lose those elements, but we hope this person is genuinely excited by education and can innovate to reflect the changing landscape of university teaching and learning.'

'Are you looking for a specialist or a generalist? It's a broad role, and the MSc covers a wide range of mental health issues, so we're looking for someone who is organised, quick-thinking and shows initiative. They must have an interest in mental health though, whether their first degree was in neuroscience, clinical, social, developmental, or other area, matters less. For historical reasons

the course is based in Psychosis Studies which is why an interest in this disorder is desirable; this person doesn't have to be an expert in psychosis, though obviously research experience in the area would help as would experience in a clinical field.'

The Department of Psychosis Studies, Head: Professor Phil McGuire, is the largest within the Division, and one of the world's largest groups conducting research in the area.

'It would be good for this person's research to complement those of the department. Our research focuses on understanding why individuals experience psychotic symptoms or develop psychotic disorders. We aim to inform the development of new clinical assessments and treatments to benefit the lives of those experiencing psychosis. To do this, we harness powerful modern analytical techniques integrating data from neuroimaging, genomics, psychopathology, cognition and epidemiology.'

Professor David makes a couple of final points. A balance of 50:50 or 60:40 between research and teaching and running courses is probably how it will work out. And I want to stress that personal qualities, interests and experience will matter more than a particular qualification.'



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The British
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Hope amongst horror

The Pulitzer-prize winning play *How I Learned to Drive* presents the disturbing story of a young girl's sexual relationship with her aunt's husband. Blurring the lines between abuser and victim, empathy and disgust, this production of the 1997 Paula Vogel play is compelling, at times humorous, and deeply troubling.

The intimate performance space at Southwark Playhouse is lined with corrugated iron and neon signs, a minimalist but powerful depiction of 1960s America, at its centre the car where teenager Li'l Bit is taught to drive by her Uncle Peck. The disjointed narrative, which skips backwards and forwards in time, captures the complexities of intra-familial abuse and perhaps the confusion felt by victims of such experiences. Uncle Peck, with his slicked-back hair and Southern drawl, is seen first as an abuser but simultaneously as an understanding and caring uncle who helps his niece escape their dysfunctional family by weekly outings in his car. This contrast forces the audience to confront a perhaps unbearable truth, that even the most seemingly kind and normal of people can hold deeply sinister desires.

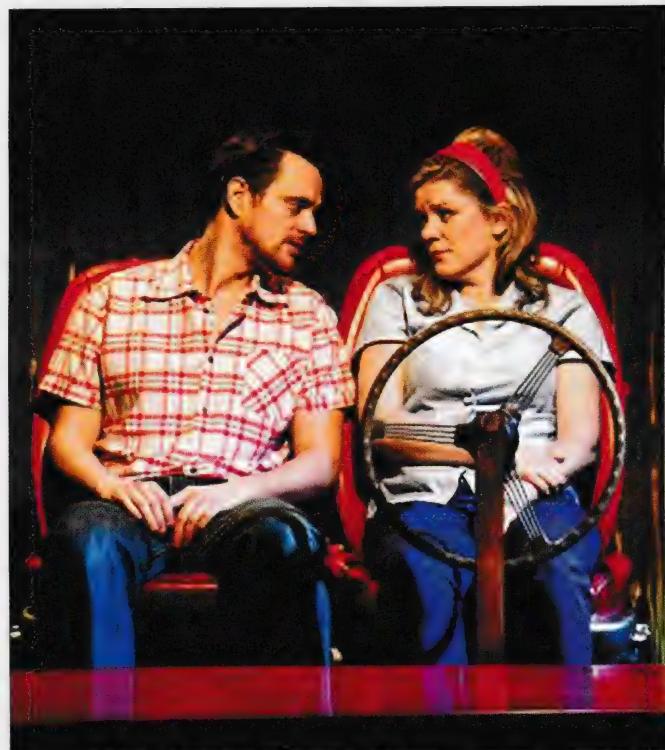
Thanks to William Ellis's wonderful performance we feel both pity and disgust towards Peck at the same time. Fluctuating between humour and horror, this production left me moved and uneasy. All five performers were excellent throughout, forcing us to join them on a journey that would normally spark revulsion. Li'l Bit, the central character played by the astonishing Olivia Poulet, is a refreshingly strong and resilient character, played with gusto. She changes perceptions of victims. We see that victimhood is relative and can affect any number of people, no matter how strong they might be. The minimalist and stylised staging and Jack Sain's direction lend themselves perfectly to content that needs very little illustrating, with so much left unspoken.

This play is extremely clever for making us despise yet somehow feel empathy for the abuser, Uncle Peck. The narrative hints at the potential cause for his abusive behaviour while also presenting us with the plain facts – he has abused before, and he is doing the same to Li'l Bit. In its final scenes we finally come to fully understand the shocking extent of the abuse she has endured at the hands of her uncle.

As well as the narrative at its core, the play also explores gender roles in 1960s Maryland and the female experience of sex and relationships at the time – experiences that are perennially topical and relevant. This play can speak to any number of people: it forces us to challenge our perceptions, which is not always a comfortable experience.

Following the production was a discussion of the psychological themes found in the play, with presenter of Radio 4's *All in the Mind* Claudia Hammond speaking to clinical psychologist Lucy Maddox. Dr Maddox works with teenagers and young people who have experienced sexual abuse themselves. She said this 'powerful' play captured the complexities of family dynamics in families where abuse exists. 'The disjointed nature of the whole production reminds me of listening to traumatic narratives which often aren't straightforward and coherent... in fact it's hard to get a coherent picture of what's gone on because it's hard for people to piece together a clear storyline. It's rare that someone will tell you from beginning to end what's happened. That's why it's often so hard for people who've experienced sexual abuse to get their cases heard – the nature of what's happened to them means they present in a way which seems less coherent and can seem less believable.'

When asked about our shifting attitudes towards the character



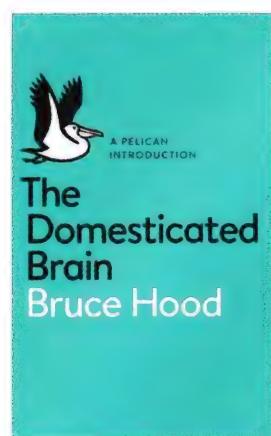
How I Learned to Drive
Southwark Playhouse

of Uncle Peck, Maddox said it was often an uncomfortable task to question just why a person has become an abuser, but that it was an essential question in tackling sexual abuse. She said: 'The play and the actors captured that sense of grooming really well... where someone's made to feel so special... she was getting listened to and getting away from her family who didn't understand her, but the consequences of that were devastating.'

Maddox also spoke about some of her own research into what happens to victims of sexual abuse who report an incident but are not believed. 'Most of my research has been with grown victims of sexual assault, and we've looked at how the psychological consequences of sexual assault can stop people from talking about what happens and how that affects the legal process. About two thirds of people who report a rape or sexual assault then drop out of the process through their own decision making. A lot of that's to do with the psychological consequences of what's happened to them as well as how they're reacted to.' She added: 'There's been a lot of work done on "Silencing" – if people talk about what's happened and aren't believed, the effects of that can be devastating and people don't talk about it for tens of years. The way we react to people reporting sexual assault or abuse is really important.'

Lil Bit was a resilient and strong victim, and Dr Maddox felt 'they portrayed her sexiness really well... it's an uncomfortable part of it that she's a sexual being who is being sexualised and taken advantage of. But there's hope at the end of the play, it spoke to resilience. There's a large literature on resilience after sexual abuse. This play captured really well the fact that the effects of sexual abuse are severe and wide-ranging, but there's such a thing as resilience despite it. The research seems to suggest that even having one protective relationship is really important, one person you have strong attachment to and takes care of you and doesn't break your boundaries is incredibly important. So there's a bit of hope there.'

Reviewed by Ella Rhodes who is *The Psychologist's* staff journalist



Enjoyable and thought-provoking



The Domesticated Brain
Bruce Hood

The Domesticated Brain is a humorous, intelligently written and easy-to-follow book about the way in which the brain influences human behaviour. The book focuses a lot on the developmental side of psychology, which I enjoyed, but it also has a lot of evolutionary and neurological psychology too.

I learnt a lot from this book: it brings in a lot of history and it was interesting to see how psychological theory had changed over the years.

Being a psychology student, I am of course interested in the brain but with non-fiction reading there can sometimes be a point where you want to stop and read something more fun, this was not the case with *The Domesticated Brain*, I was kept intrigued and engaged the whole way through, wanting to learn more about the way our brain works. I particularly enjoyed the chapter titled 'Are we born bad?', which I found to be very insightful in the nature/nurture debate that is forever prominent in psychology.

Overall, I would highly recommend this book to both students and academics as it is definitely a read that will be enjoyable as well as thought-provoking.

| Pelican; 2014; Pb £7.99
Reviewed by Rebecca Randles
who is a psychology student at Liverpool John Moores University



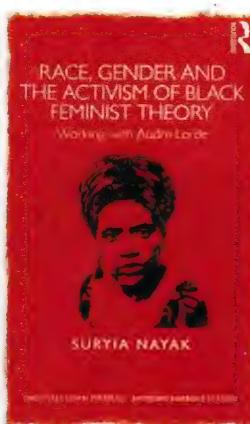
Surviving the intersectional experience

Race, Gender and the Activism of Black Feminist Theory: Working with Audre Lorde
Suryia Nayak

This book critical psychology's boundaries as a discipline, encouraging a thorough engagement with the activism of black feminist theory and calling into question its current absence. Nayak underlines the importance and interlocking nature of black feminist activism to black feminist theory, moving between the two to offer interventions in both theory and practice.

Through the work of Audre Lorde and other black feminist theorists Nayak offers critical psychology a new lens through which we can interrogate how living within a racist society creates racist 'psychic structures' which operate differently for black and white people; exploring the interconnection between 'ideology', 'embodiment' and our psychic lives. Through this theoretical lens, Nayak makes the case for black-women-only services and activist spaces.

Nayak also critiques psychological methods



that fail to utilise intersectionality and that consider an individual through one facet of their identity at a time. Lorde spoke of this fragmentary approach as 'destructive' and a 'terrible injustice' to her black, lesbian, feminist identity. Nayak champions an intersectionality that brings possible 'resistance to fixed, stable, totalized identity formations imposed by a racist, homophobic patriarchy'. Here Nayak reminds us that intersectionality is not just a 'theory' but a way in which one survives the 'intersectional experience'.

Nayak lays a strong foundation for a critical psychological engagement with the activism of black feminist theory for all of us committed to addressing the psychological effects of oppression and who seek to make social change.

| Routledge; 2015; Pb £24.99
Reviewed by Stephanie Davis who is an MPhil/PhD candidate at the University of Brighton



Very different times

You Never Get Out: Memories of Two Psychiatric Hospitals
Robert Grainger

This is an odd little pathography and, at 122 pages, little more than a pamphlet. Robert Grainger writes from two perspectives: that of a patient in the 1950s and of a chaplain in the 1980s.

The smaller part of the book recalls a period after National Service when he was incarcerated, not completely voluntarily, and has a number of echoes of later fictional works, not least *One Flew Over the Cuckoo's Nest* and *Catch-22*. Whilst 60 years later these patchy recollections seem like history, the personalities depicted among both patients and staff are familiar: there are the same hints of paranoia, the questions of sanity versus behaviour and the others who were quite clearly 'mad'. Some pertinent musings are presented on the nature of mental illness, diagnosis and illness behaviour.

The latter part as a chaplain takes place in a very different time to then and to now, with a large number of chronic inpatients and before the move to care in the community. It becomes less a coherent story than a rambling soliloquy. In a conversational tone, it opines on stigma, religion, sex-roles

without forming conclusions as pithy or as precise as in an article or essay.

| Trafford Publishing; 2013;
Pb £8.43
Reviewed by Sally-Ann S.
Price who is Neurosurgery
Senior Registrar, Southmead,
Bristol

contribute

Sample titles just in:

Hoax Springs Eternal: The Psychology of Cognitive Deception
Peter Hancock
Speaking Our Minds Thom Scott-Phillips
Great Myths of Child Development Stephen Hupp & Jeremy Jewell

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Powerful, crazy, cruel

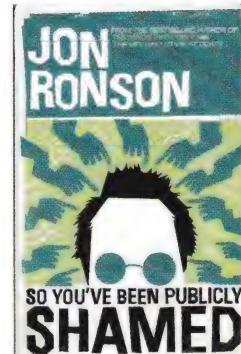
So You've Been Publicly Shamed
Jon Ronson

Throughout his career as a journalist and author, Jon Ronson has excelled in tales of everyday craziness. The ideas themselves are often fairly mundane: delving into conspiracy theories, investigating whether psychopaths walk among us, exploring what's it like being in an oddball band. *So You've Been Publicly Shamed* is, hands down, his most cutting-edge idea for a book yet. Referring mostly to social media, he writes: 'A great renaissance of public shaming is sweeping our land. Justice has been democratized. The silent majority are getting a voice. But what are we doing with our voice? We are mercilessly finding people's faults. We are defining the boundaries of normality by ruining the lives of those outside it. We are using shame as a form of social control.' I have seen this story play out. Ronson has my attention.

That's partly because it's a story that involves psychology, psychologists, and even the British Psychological Society. In a skilful hat-trick of opening chapters, Ronson

considers the fall from grace of science writer Jonah Lehrer, exposed as a plagiarist and inventor of Bob Dylan quotes. 'Probably the worst infraction', Ronson notes, 'was that Jonah had taken some paragraphs from a blog written by Christian Jarrett of the British Psychological Society and passed them off as his own.' Well, as Martha Graham used to say, 'If you're going to steal, steal from the best'. For the record, Lehrer personally apologised to Jarrett (editor of our Research Digest), and the apology was accepted.

Ronson weaves the story beautifully, cutting between Lehrer's reaction to his 'brutal' shaming, and the realisation of the journalist who exposed him that he was at 'the head of a pitchfork mob.' Michael Moynihan tells Ronson: 'And it's, "What are these people fucking doing here? Why are they acting like heathens? I don't want to be



associated with this at all. I want to get out of here." ...I'm watching people stabbing and stabbing and stabbing Jonah, and I'm, "HE'S DEAD."

I am convinced that Ronson is spot on when he says that social media is 'a stage for constant artificial high dramas. Every day a new person emerges as a magnificent hero or a sickening villain.' We define the boundaries of normality 'by tearing apart the people outside of it'. And the idea that this is an exciting new democracy is illusory: as documentary maker Adam Curtis tells his friend Ronson, feedback loops are turning social media into 'a giant echo chamber where what we believe is constantly reinforced by people who believe the same thing'.

There's a lot of fascinating psychology in here: confirmation bias, cognitive dissonance, group influence, the misogyny of shaming, how the shammers themselves tend to come from a place of shame, and the way public shaming 'destroys souls'.



A novel and intimate insight

The Secret Life of 4 Year Olds
Channel 4

This one-off programme followed 10 four-year-olds brought together in a nursery specially rigged with cameras. The conversations, triumphs, trials and tribulations that ensued were shown as they first met and as they reconvened six months later. Experts Dr Sam Wass (MRC Cognition and Brain Sciences Unit, Cambridge) and Dr Paul Howard-Jones (University of Bristol) were on-hand to observe and analyse behaviour (see their experiences making the show below).

Unique to this show was its ability to track children testing and developing social interactions that we ritualise and take for granted as adults. In scenes from their first meeting, the children's immediate separation into gendered groups and primate-like play behaviour is clear. Boys range in boisterousness as they negotiate pecking order, whilst girls play 'Mums and Dads'. Strong personalities seem to

determine in-groups, with sharers generating wider friendship groups than hoarders. 'Sharing is caring', don't you know! As they reconvene six months later, big changes are clear in the children's language skills and social interaction. Children previously aloof seem much more prepared to rekindle past relationships. The limits of friendship are also tested, with a so-called 'love triangle' of girls turning to isolation for one as the others seek to strengthen their friendship. We are hereby reminded how cruel children can be in managing their relationships! Insight into the children's home life and background is given by parents, with a wide range of values and ethnicities included.

This was definitely an entertaining watch. It evidently captured public attention, given the number of quotes and screen-grabs online the next day. However, focus tended to be on the

comedy of conversation rather than the developmental insight drawn from this unique observation. Although experts were on board to analyse proceedings, discussion of the psychological processes and wider literature were very limited. Some environmental manipulations are set, such as a den-building challenge and an exposed chocolate cake. However, the rationale for these is not really described. Also, unlike other school-based fly-on-the-wall documentaries such as *Educating Yorkshire*, cameras were not fixed to walls or structures. Instead, handheld cameras were used and infrequently seen in-shot. These seemed to grab the children's attention at times and seem very likely to interfere with situational dynamics.

However, what this



programme has contributed was a novel and intimate conversational insight at this rapidly developing age. There is much more that could be shown: famous developmental studies could be replicated, theories discussed... perhaps scope for a longer series in the future?

I Reviewed by Emma Norris
is a PhD student at University College London and Associate Editor (Reviews)

brutalizing everyone, the onlookers included'. Ronson has done his homework on group influence, with input (sparkling, as ever) from social psychologists Alex Haslam, Steve Reicher and Clifford Stott. There are some neat insights from participants in Zimbardo's Stanford Prison Experiment, particularly Dave Eshelman's admission of acting up for the role of guard: 'I planned it. I mapped it out. I carried it through. It was all done for a purpose. I thought I was doing something good at the time.'

I think Ronson believes that he is doing something good. But he also seems well aware that his relationship with his subjects is changing. 'The powerful, crazy, cruel people I usually write about tend to be in far-off places,' he says. 'The powerful, crazy, cruel people were now us.' Is Ronson aware of the power he has not just as an online shamer, but as a writer of this type? He quotes another successful science writer, Malcolm Gladwell: 'I was so enamoured by the metaphorical simplicity of that idea that

I overstated its importance.' I think Ronson knows that he, like all journalists, hates to let the truth get in the way of a good story.

To be fair, it could be argued that Ronson tacitly acknowledges this danger; even that he is actively inviting opprobrium. Look at the cover: brand Ronson, identifiable now simply by a caricature of spiky hair and round glasses, surrounded by numerous pointing fingers. 'So you've been publicly shamed' – Ronson is almost calling on us to have a pop at him personally. And there are good grounds to do so. Ronson repeatedly admits that his interviewees were often reluctant to talk to him, and sometimes 'expressed misgivings' about their quotes being used in the book. Adria Richards, one of the 'shamers' included, is not best pleased with her treatment by Ronson (www.shakesville.com/2015/02/the-falsest-of-false-equivalencies.html). And some of the academic interviewees for a previous book, *The Psychopath Test*, were 'taken aback to find that the book contained

"liberal" and/or fictional accounts of their interactions with him' (www.psychopathy.org/en/home/10-news/news.html). Is this journalistic crime not equal to those Lehrer committed? Yet Ronson escapes scot free, and in fact says Lehrer 'represented literary fraud in the pop science world. He made a fortune corrupting an already self-indulgent, bloated genre.' For me, that got the biggest laugh of the book (although the joke about confirmation bias is a cracker).

In his previous book, *Frank*, Ronson writes that journalists take 'the furthest reaches of their interviewees' personalities, stitch them together, deleting their ordinariness. We were defining people by their flaws.' I hope Ronson doesn't become defined by his own, because he's an extraordinary storyteller when it comes to ordinariness.

I Picador; 2015; Hb £16.99

Reviewed by Dr Jon Sutton who is Managing Editor of *The Psychologist*



Comment from Dr Sam Wass, a contributing psychologist on the programme:

During filming there were a number of cameramen roving through the nursery. All of the children were wearing radio mikes. Paul and I sat behind a wall, watching all the video feeds and with a sound board so that we could choose which of the children's conversations to listen in to (as following all the children

at once was impossible). During this time we were being filmed for our reactions – and then during every break, Paul and I were interviewed for our comments on the previous sessions' events. After that, we met as a group and discussed new tasks that we could give the children, with an eye to nurturing and exploring the relationships that we could see developing within the group. There was a rough pre-planned activity schedule for each day's filming, but with space left to react to developing events.

Paul and I were left pretty free by the producers to suggest ideas, and to talk about whatever interested us. The producers were particularly interested in exploring ways in which the world of children was just like that of adults – which I think is a really interesting starting point. I think the way the programme turned out – focused on individual personalities and developing

relationships amongst the children – was hugely engaging for audiences, and generally the feedback we have got from other scientists has been very positive. I found taking part in the programme a hugely enjoyable experience – both in terms of meeting a completely different group of people to those with whom I normally interact in academia, and in terms of getting a fresh perspective on what I do in my everyday job, which is to observe and think about how children behave. If you want to do this kind of work, you have to recognise that your contribution is very much a drop in the ocean – and that the big decisions get made 'upstairs'! The production team, however, were extremely interested in and responsive to our comments. Though I think we were just particularly lucky on this programme.

One final thing that was really brought home to me from this

experience is that, as an academic who does a lot of engagement with 'lay' audiences, the types of 'lay' audiences I would normally give a talk to are in fact very unrepresentative of the population as a whole. So, for example, if I am doing a talk at our Cambridge Science Night – a talk for a 'lay' audience insofar as I need to assume no prior knowledge in the audience – the types of people will be scientists, interested in the scientific method, not necessarily interested in children, whereas the audience for a programme such as this might be completely different. They might have no scientific background, and perhaps even have a child in the family that they're concerned about, and want answers. This poses an interesting and very different challenge, particularly considering the numbers involved. The broadcast reached a live audience of 2.63 million!

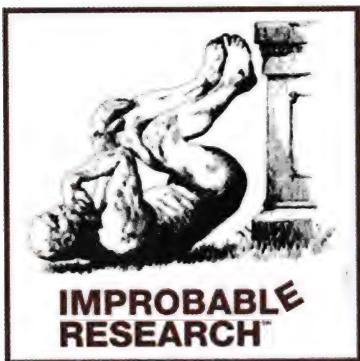
Compelling science



Improbable Research (podcast series)
Annals of Improbable Research

The Mind Readers (podcast)
Mosaic Science

The Annals of Improbable Research, the magazine dedicated to research that 'makes people laugh and then think', has recently launched a weekly podcast, 'Improbable Research', which is sure to be a massive hit with anyone interested in the quirky and obscure side of science.



Presenter Marc Abrahams' dead-pan style of reporting is a perfect comedic match for truly improbable research, well suited to discussing papers such as Kees Moeliker's 'The first case of homosexual necrophilia in the mallard duck'. However, don't let this comedy value fool you; 'Improbable Research' is a scientific podcast, and the methodology of studies such as Greenway and Garcia's 'Designing and testing an improved packaging for large hollow chocolate bunnies' is treated to rigorous examination, as is an investigation into the economic benefits of Kurt Cobain's suicide (the tactfully titled paper 'Artists' suicides as a public good'), with joyfully entertaining results. 'Improbable Research' takes the listener on a hilarious adventure through esoteric, absurd and at times questionable research, and leaves them amused, bemused, and eager for more.

Compelling in a rather different way is 'The Mind Readers', from Mosaic Science, a podcast produced by

mosaicscience.com. 'The Mind Readers' is an audio version of an article published on the website by Roger Highfield, which details the pioneering work of Adrian Owen, Steven Laureys and Nicholas Schiff. These three researchers have made startling discoveries in their work with patients trapped in 'vegetative states', which have revolutionised the way such 'disorders of consciousness' are approached. Summarising the 49-minute episode, and the ground-breaking findings of the research, is beyond the scope of this review; the podcast itself summarises decades of work. Through ingenious applications of brain-imaging techniques, researchers have refuted the assumption that those in vegetative states can have no conscious awareness. The sometimes complex neuroscience of this research is well explained, and anecdotes from patients ensure the human side of the issue is not neglected; a female patient's description of being trapped in such a state, suffering an unquenchable thirst, inability to



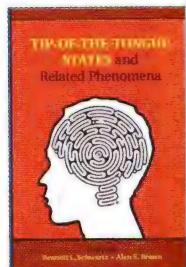
communicate, and failed attempts at suicide, for example, strikes a deep emotional chord. In this way 'The Mind Readers' flawlessly marries clearly explained science and humane sensitivity; scientific journalism at its best.

I Reviewed by Tom Holliman
who is a student at Anglia Ruskin University

There, but not quite



Tip-of-the-Tongue States and Related Phenomena
Bennett L. Schwartz & Alan S. Brown (Eds.)



You're meeting your schoolmates after almost two decades. As you catch up, you regale each other with anecdotes. Someone says, 'Do you remember the student who fainted in maths class in Grade X?' Sure, you recall the incident, but what was the name of the student? You're sure she was female, and her name either began with 'R' or 'P.' Er...

As the name, or lack thereof, nags at you, you are experiencing a classic phenomenon that psychologists have doggedly studied for years. The tip-of-the-tongue (or TOT) state is fascinating because it resembles dangling a carrot that is just out of reach. For cognitive psychologists, TOTs represent thinking in slow motion or lexical retrieval in action and can thus serve as a window to these processes. Found across cultures and languages, including ASL, TOT states, unlike most psychological phenomena, are easy to recreate in controlled

lab settings. Diary studies show that low-frequency words and people's names lend themselves to TOT states. Further, TOTs involve both cognitive and metacognitive components, making them ideal to study phenomenological experiences. As TOTs increase with age, they may be used to better understand various geriatric populations such as those with Alzheimer's or Parkinson's disease.

The book examines TOTs in significant depth but requires graduate-level training to appreciate it. It is a great resource for those studying TOTs and related phenomena like déjà vu. However, the technical language is unlikely to appeal to lay readers.

I Cambridge University Press; 2014; Hb £65.00

Reviewed by Aruna Sankaranarayanan who is Director of PRAYATNA, a centre for children with learning difficulties in India

Beautifully and sensitively written



The Man Who Couldn't Stop: OCD, and the True Story of a Life Lost in Thought
David Adam

It's not uncommon for unusual and disturbing thoughts to drift into our minds, but what happens if they won't drift away again?

David Adam takes us on a journey into the most intimate parts of his mind, vividly describing the intrusive thoughts and compulsions that have plagued him since his late teens, giving us an invaluable opportunity to feel and understand what it's like to suffer from OCD. Society and the media may portray OCD as a humorous quirk, a gimmick or behavioural tic, but this book demonstrates the fear, frustration and suffering behind 'a life lost in thought'.

As Adam's story unfolds, we explore the history of the disorder and its treatment, genetic and environmental risk factors, Freudian, behaviourist and cognitive theories, psychosurgery and drug therapy evolution and neuroscience. Not only does Adam explain complex scientific models in an engaging way, he maintains a balanced and critical approach, highlighting methodological flaws and limitations

This beautifully and sensitively written book is as poignant and moving as it is informative. It has something to offer everyone.

I Picador; 2014; Hb £16.99 Reviewed by Lauren Canvin who is a research assistant at Oxford Centre for Anxiety Disorders and Trauma



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For further information please contact:

Saima Ali, DCPsych Academic Co-ordinator, on 020 8579 2505 or at saima.ali@metanoia.ac.uk

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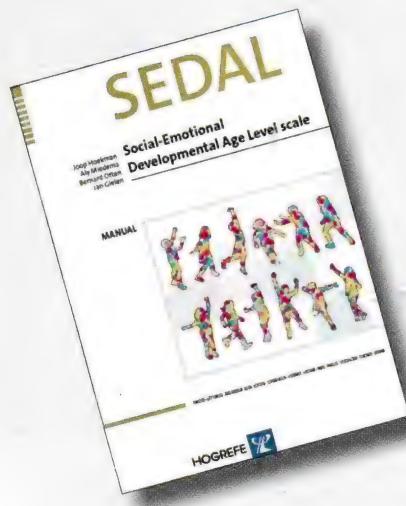
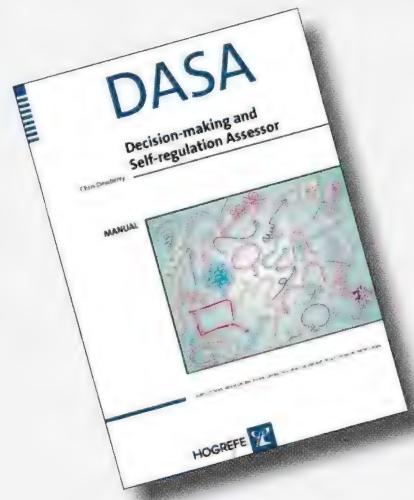
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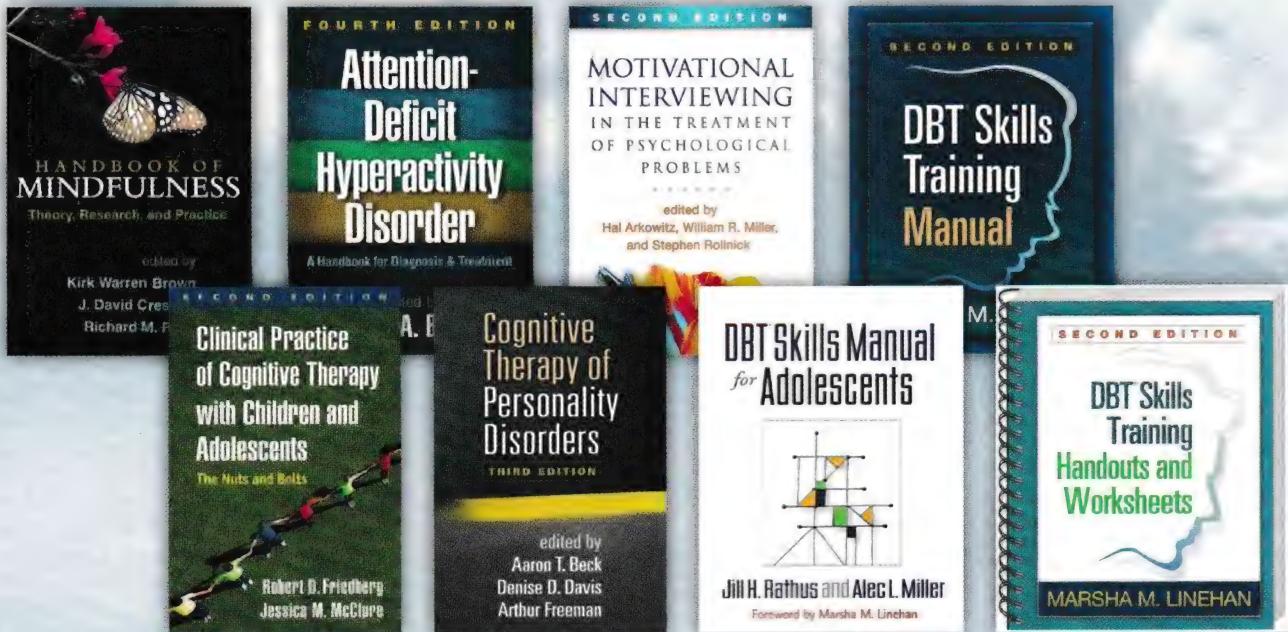
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How it all began

Alan Baddeley describes the origins of the multi-component model of working memory

It is now more than 40 years since Graham Hitch and I published our paper proposing to extend the earlier concept of short-term memory (STM) into a more complex and ambitious working memory model (Baddeley & Hitch, 1974). We suggested replacing one STM system with three inter-related subsystems, emphasising our assumption that its function was to hold information while working on it; a memory system that helps us to think. Our original model remains at the centre of the current version (Baddeley, 2012). The multicomponent model did not, of course, emerge fully formed. Hence I was intrigued by the invitation to reflect on how it all began, and to supplement an earlier account elsewhere, of the way in which the model subsequently developed (Baddeley & Hitch, 2007).

My first job involved working at the MRC Applied Psychological Unit in Cambridge on the design of postcodes. My supervisor was Conrad, currently best known for his discovery of the importance of acoustic similarity in verbal short-term memory. He showed that errors in recalling strings of letters tended to be similar in sound to correct items (e.g. b for v) and that sequences of similar-sounding items (e.g. b g v t c) were harder to remember than dissimilar (f k w j q). My task however, was concerned with long-term memory for postal codes. I applied the recently developed field of information theory to verbal long-term memory (LTM) and was

able to generate memorable codes for every UK post town based on the letter structure of English. By this time, however the Post Office had already settled on the current system, so they were never used.

My work linking language structure to memory did, however, lead to my first short-term memory experiment, demonstrating to three eminent Harvard professors, George Miller, Gerry Bruner and Leo Postman, that their paper showing an influence of language structure on perception was in fact based on memory (Baddeley, 1964a). Their paper was also criticised by an up-and-coming young Canadian psychologist, Endel Tulving. I pointed out that he was wrong too (Baddeley, 1964b); I seem to have been rather a pugnacious young man!

I was then switched to working on finding an improved method for measuring the quality of telephone links. The idea was that the negative impact of a noisy signal would be exaggerated if the message had to be held in memory, hence providing a more sensitive measure of the link. I speculated that the measure might be even more sensitive if the items to be remembered were similar in sound – Conrad's acoustic similarity effect – and proceeded to test this.

By this time there was a very active

"What we found was more complex, and in the long run more interesting"

controversy concerning whether it was necessary to assume more than one memory system, with Conrad's work being cited as evidence for a temporary acoustic system, in contrast to the more stable system in long-term memory. However, Conrad had not tested other kinds of similarity, and so I decided I would use words rather than letters and, compare acoustic similarity with similarity of meaning. My experimental setup was rather basic, a room full of volunteers, a noise source that could be switched on or off and myself reading out sequences of five words. The results were clear; a big effect of phonological similarity, a small but significant effect of meaning, and no effect of noise level over and above what could be accounted for by mishearing. My bosses Broadbent and Conrad agreed that this was an interesting result, theoretically if not practically, and I was encouraged to go ahead and explore it further. The telephone project was passed on to Patrick Rabbitt who had just

arrived at the Unit (using a more sensitive method he was able to show a small effect of noise). In collaboration with my friend Harold Dale, we went on to demonstrate that the pattern changed

dramatically under standard long-term memory conditions, finding meaning to be all important and sound relatively unimportant. On the basis of these results I began to conclude that there were two separate memory storage systems: a short-term system relying on an acoustic code and a long-term system based on meaning.

This view rapidly proved too simple; semantic effects can occur dramatically in standard STM tasks such as memory span; span for unrelated words is around five and for meaningful sentences nearer 15. Furthermore, we must have acoustic/phonological long-term memory, otherwise how could we learn the sound of new words? The increasingly influential neuropsychological evidence was also inconsistent with my simple

Atkinson, R.C. & Shiffrin, R.M. (1968). Human memory: A proposed system and its control processes. In K.W. Spence & J.T. Spence (Eds.) *The psychology of learning and motivation: Advances in research and theory*. (Vol. 2, pp.89–195). New York: Academic Press.

Baddeley, A.D. (1964a). Immediate memory and the 'Perception' of letter sequences. *Quarterly Journal of Experimental Psychology*, 16, 364–367.

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Baddeley, A.D. & Warrington, E.K. (1970). Amnesia and the distinction between long- and short-term memory. *Journal of Verbal Learning and Verbal Behavior*, 9, 176–189.

Cermak, L.S. & Reale, L. (1978). Depth of processing and retention of words by alcoholic Korsakoff patients. *Journal of Experimental Psychology: Human Learning & Memory*, 4, 165–174.

Craik, F.I.M. & Lockhart, R.S. (1972). Levels of processing. A framework for

view. Despite earlier claims that amnesic patients showed semantic encoding deficits (Cermak & Reale, 1978), the alcoholic Korsakoff patients on which this conclusion was drawn subsequently proved to have subtle frontal lobe damage. Patients with a dense, but pure amnesia showed no semantic encoding difficulties (Baddeley & Warrington, 1970).

I was not alone in my enthusiasm for exploring the field of short-term memory. Demonstrations of apparently clear differences between long- and short-term memory led to the generation of a large number of experimental paradigms and many models. One book, for example, had 13 chapters each with a different model. One model, however, became dominant, so much so as to be named the 'modal model'. This model was proposed by Atkinson and Shiffrin (1968), who also claimed it to be a working memory model which, in addition to providing short-term storage, was capable of such complex activities as selecting strategies, controlling input to LTM, guiding retrieval and much else. The model was also expressed mathematically, although the examples provided were limited to the learning of meaningless verbal items.

By the end of the 1960s however, problems with the modal model were starting to emerge. The assumption that material held in the short-term store would automatically transfer to LTM, with duration in store linked to amount learned, proved unjustified. Failure to address the issue of type of material and method of encoding created even more problems. These came to a head with a paper by Craik and Lockhart (1972), who introduced the concept of levels of processing whereby learning depended on what was done with the material rather than how long it was held in STM. For example, processing a word in terms of its visual appearance led to poor retention, making a phonological judgement about it improved retention,

memory research. *Journal of Verbal Learning & Verbal Behavior*, 11, 671-684.

Shallice, T. & Warrington, E.K. (1970). Independent functioning of verbal memory stores: A neuropsychological study. *Quarterly Journal of Experimental Psychology*, 22, 261-273.

but processing it semantically and relating it to existing knowledge was by far the most effective. Problems also came from neuropsychology, where patients with grossly impaired verbal STM were studied by Shallice and Warrington (1970); according to the modal model, defective STM should lead to grossly impaired LTM, which it did not. Furthermore, if the system acted as a working memory, such patients should have massive problems in their daily lives. They didn't. At this point many investigators into STM moved on to other more recently

remembering strings of digits, while performing the various tasks that were assumed to depend upon short-term/working memory. The longer the digit sequence, we argued, the more STM capacity should be used up and the greater the disruption.

What we found was more complex, and in the long run more interesting than this. Concurrent digit load slowed performance down, but had an effect that was far from catastrophic. Hence in one study people solved simple reasoning tasks while holding from zero to eight

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The research started at Sussex, but was continued and published from Stirling

developing areas, such as levels of processing and semantic memory.

It was at this point, with me at the age of 37, that my head of department gently suggested I should perhaps consider seeking my first research grant. I applied to work on the link between long- and short-term memory, asking for a postdoc and a research assistant. The committee decided it was too expensive but happily cut the research assistant not the postdoc, Graham Hitch. I knew Graham as a master's student, converting from a Cambridge physics degree to experimental psychology. He had just finished a PhD under Donald Broadbent on STM, and proved (and still proves) to be an ideal colleague and collaborator.

It seemed an inauspicious time to be entering the field of STM, given its problems and the fact that we did not have access to patients with the STM deficits that were so theoretically important. Happily, we hit on the idea of turning our students into 'patients', not by removing chunks of their left hemisphere, but by keeping it occupied in

acoustic/speech-based information (the phonological loop) and its visual equivalent (the visuo-spatial sketchpad).

At this point I received an invitation to submit a chapter to an influential annual series entitled *Recent Advances in Learning and Motivation* (It is interesting to reflect that if this happened today, our head of department would strongly advise against publishing in a volume that would not be eligible for the REF and would not register on the SCI citation count. Instead we would have had to publish as a series of separate papers, in each case struggling with sceptical referees concerned at our excessive speculation.) We hesitated; the model was clearly not yet complete (it still isn't!), but it seemed too good an opportunity to miss and Baddeley and Hitch (1974) duly appeared. We would have been amazed – indeed, I am still amazed! – that it would still be cited four decades later.

I Alan Baddeley is Professor of Psychology at the University of York
a.baddeley@york.ac.uk

... with Sue Llewelyn

'We underestimate the power of listening'

One right decision

Becoming a clinical psychologist, which has given me a hugely interesting professional life. I have worked both as a clinician, which has allowed me to get to know about the lives of people from all parts of society, and as an academic, which has given me the chance to think, research, teach and talk with people from all over the world about mental health, and how best to help people when things go wrong for them.

One wrong decision

Not paying enough attention to things I found difficult, like some of my statistics lectures and the finer points of IT. There is also so much in psychology that I did not learn properly, and that would have enriched my understanding of life. This also applies to other areas too, as I wish I had spent more time learning about history, music, science and literature.

Sue Llewelyn

is Professor of Clinical Psychology and Fellow, Harris Manchester College, Oxford University



One guiding principle from psychology

Very simple, the power of positive reinforcement. It always amazes me how, despite what we know in theory, in practice we tend to underestimate the power of listening to people, encouraging them, valuing them and thanking them. My own research on what is helpful in psychological therapy highlighted the importance for clients of discovering a new understanding, made possible within the context of a supportive relationship. As a teacher and trainer I have always also tried to work from strengths and to build confidence to learn amongst my students.

One lesson learned the hard way

No matter how much you want to help someone, they have to learn to help themselves; you can't do it for them. That applies to trainees, students, clients, colleagues and family.

One regret about clinical psychology

That we are somewhat professionally isolated; we think too much of ourselves, and insist on the specialness

of our viewpoint. We would have so much more influence if we worked more closely with colleagues like nurses and medical colleagues, seeing their problems as our problems and bringing in psychological thinking as a core part of health care.

One psychologist you admire

So many to choose from... In the early years of my career I was hugely influenced by David Smail, who showed how important macro social forces are in promoting unhappiness, and how corrosive the forces of inequality and engineered envy are for human happiness. But I must also give mentions to Glenys Parry, who helped me start to understand gender issues; Bill Stiles, who inspired me into the wonderful world of psychotherapy process research; and John Hall who has nudged me into several sensible career directions.

One underrated psychologist who has influenced you

George Kelly. His personal construct theory is a truly psychological theory that pre-dated cognitive psychology but that had the potential to integrate emotion and cognition. Sadly it has had less exposure than it deserves following Kelly's untimely death in the 1950s. But his ideas have a place in CAT, which I subsequently found to be a really helpful integration of therapeutic approaches.

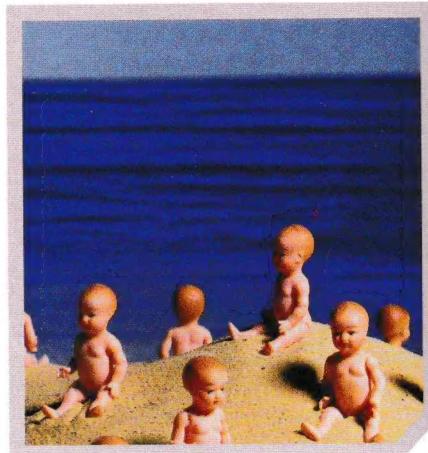
One thing you are proud of

Having had an opportunity to do what I really wanted to do in Oxford, which was to build a team and a postgraduate training course that would act as a secure and safe base from which staff and trainees could develop (using a 'Good Enough' model). People would enjoy their work, take risks,

have fun but always act with zero tolerance of disrespectful or unprofessional behaviour. I firmly believe that unhappy and stressed staff can't provide consistent or quality care for patients, so I wanted to build a place where we could help people develop their potential without being frightened, shamed or blamed. That is also what I have tried to do in my NHS organisational work, by improving team performance and strengthening collaborative leadership.

One memorable patient

I recall working for months with a family who had not been able to bond emotionally



with their fourth baby boy (when a baby girl had been desperately wanted). The team provided scores of hours of clinical input, all to no avail. The problem was, however, quickly resolved after the baby was entered by the mother into a seaside beauty baby contest, and won, easily beating the 10 other baby girl contestants. Taught me humility about my therapeutic reach!

One hope for the future

Having worked in the NHS/university sector for 40 years I am looking forward to discovering the other parts of life that I have sadly neglected in trying to be a good psychologist, like music, literature, science and history.

A special feature on the General Election, and much more...

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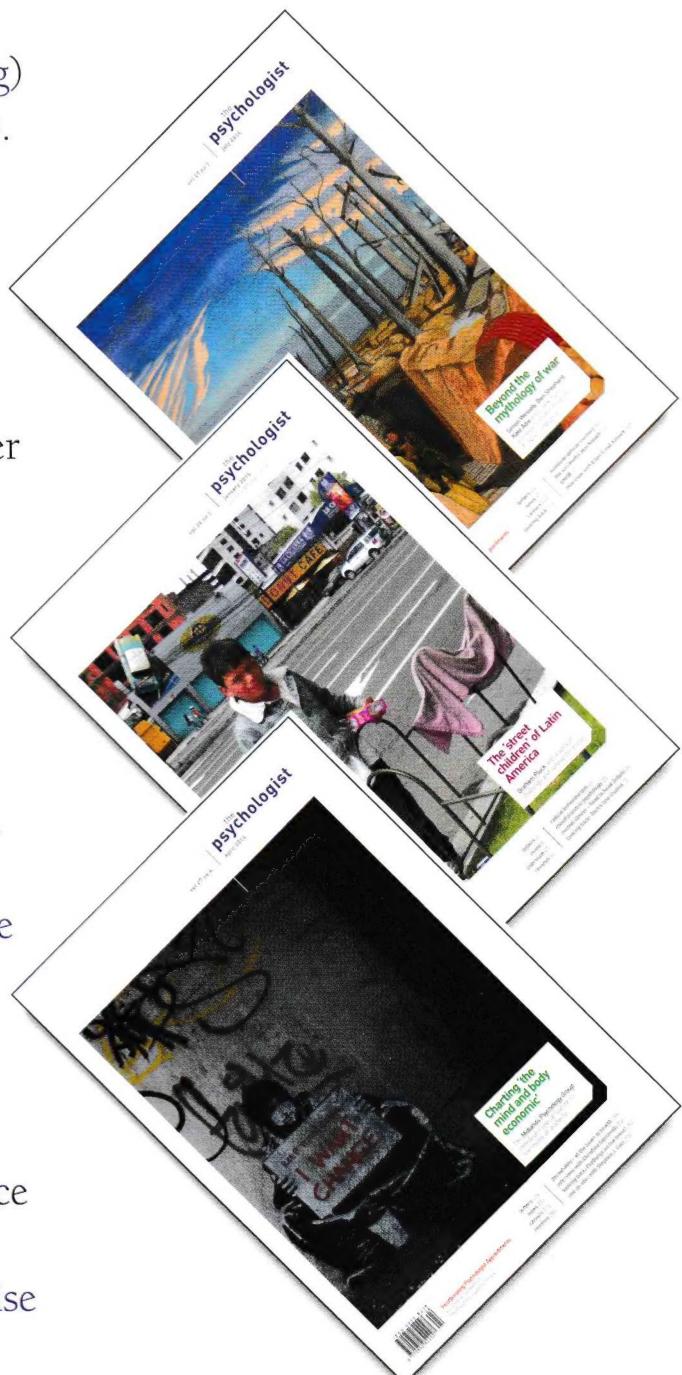
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